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HAZARDOUS WASTE ELEMENT

DECEMBER 1990

SANTA BARBARA COUNTY
COMPREHENSIVE PLAN

**HAZARDOUS WASTE
ELEMENT**

Adopted December 1990

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APPENDIX A

This appendix contains the results of the analysis of the data collected during the study. The results are presented in the form of tables and graphs.

RESULTS OF THE ANALYSIS

The first table shows the results of the analysis of the data collected during the study.

The second table shows the results of the analysis of the data collected during the study.

The third table shows the results of the analysis of the data collected during the study.

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The nineteenth table shows the results of the analysis of the data collected during the study.

The twentieth table shows the results of the analysis of the data collected during the study.

The twenty-first table shows the results of the analysis of the data collected during the study.

The twenty-second table shows the results of the analysis of the data collected during the study.

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THE CHURCH

There is a great deal of work to be done in the Church. The Church is the body of Christ, and it is the duty of every Christian to be a part of it. The Church is the place where we can find the love and support of our fellow Christians. It is the place where we can grow in our faith and in our understanding of God's Word. The Church is the place where we can find the peace and comfort of God's presence. It is the place where we can find the strength and courage to live our lives for God and for others.

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- A-1 Legislation
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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In the past decade, the issue of hazardous waste management has captured the attention of the public, government, and business alike. Improper management of hazardous waste has given rise to widespread concern in communities throughout the state. This concern has been brought about by a recognition of the potential danger to people and the environment, the extent to which these wastes exist within our society, and the proliferation of illegal disposal practices.

A hazardous waste is defined as a waste that is toxic, corrosive, ignitable, reactive, an irritant, or a strong sensitizer and thereby poses a threat to human health and the environment. These wastes have become a common by-product of our modern industrial society and an integral part of our growing economy. As such, it can be expected that our society will continue to use products associated with the generation of hazardous wastes. This emphasizes the need for proper management of current as well as future hazardous wastes with the goal of minimizing the amount of waste generated and reducing the hazard of what is generated. If environmentally sound and economically feasible waste management solutions are not made available, the use of outmoded disposal practices will continue and public health and the environment will be threatened by a further increase in the illegal disposal of hazardous wastes.

Managing hazardous wastes in a prudent fashion is a complex problem that requires the cooperation of government, industry, and the public. The problem is complicated by the fact that there are a number of different types of wastes for which different management techniques are required. For example, some wastes such as solvents are well-suited to recycling whereas for others, only complex treatment techniques are currently available. Another difficulty in managing hazardous waste is that these wastes are generated by a myriad of types and sizes of businesses as well as individual households. For instance, in Santa Barbara County, waste generators include the oil and gas industry, electronics firms, schools, photo processing labs as well as many types of service industries. Feasible solutions must include the many diverse types of waste which are generated and must incorporate an educational campaign which is effective in reaching the broad array of hazardous waste generators.

It is important to note that the County Hazardous Waste Management Plan is concerned primarily with hazardous waste issues and not hazardous materials issues. Hazardous wastes are substances of no further intended use which need treatment or disposal, or both, while hazardous materials include new and usable substances. The handling and use of hazardous materials is regulated by a set of legislative and regulatory requirements which falls outside the scope of this Plan. Hazardous materials issues are discussed only when such issues or programs overlap with the discussion of hazardous waste issues (e.g., emergency response, transportation, and storage).

1.2 LEGAL CONTEXT

At both the federal and state level, there are many statutes which have been adopted over the years to deal with various aspects of the hazardous waste problem. Many of the regulatory requirements set forth by federal and state legislation are implemented through local ordinances and programs. Appendix A presents a brief description of the major regulations which govern the generation, storage, treatment, collection, transport, and disposal of hazardous waste and hazardous waste facility construction. In addition, information on existing local programs which implement various hazardous waste regulations is included in the appendix.

Both federal and state statutes mandate an immediate and dramatic improvement in the way hazardous waste is managed. A key focus of both federal and state legislation are restrictions on the land disposal of hazardous waste. Land disposal will be allowed only if wastes are treated to specific standards prior to disposal. The key date in both federal and state law is May 8, 1990, after which all land disposal of untreated hazardous waste is banned (with the exception of special wastes and solid waste generated from the cleanup of a hazardous waste site). These laws restricting the land disposal of untreated hazardous waste make the need for waste minimization and for treating, recycling and residual disposal facilities critical. It is urgent that waste minimization is implemented to the fullest extent possible and that safe hazardous waste facilities are available to properly manage the hazardous waste that is generated.

1.3 THE HAZARDOUS WASTE MANAGEMENT PLAN

Despite the many statutes currently in effect to regulate hazardous waste, the California legislature recognized a pressing need for a comprehensive approach to hazardous waste management. In recognition of this need, the California legislature passed Assembly Bill 2948 in 1986 (Health and Safety Code, Sections 25135 and 25199). The purpose of the bill is:

- * To assure the safe and responsible management of hazardous wastes;
- * To establish an effective planning process involving public and private sector participation for the management of hazardous wastes;
- * To prevent hazardous wastes from being permanently disposed into the land or air without being processed by an alternative technology; and
- * To provide a more effective method of the siting of needed hazardous waste facilities.

The legislature recognized that these objectives could be accomplished best at the local level. Therefore, AB 2948 authorized local governments in California to prepare a Hazardous Waste Management Plan. These plans will serve as the principal planning document for hazardous waste management at the local level. Upon their adoption, they will become an

element of a County's Comprehensive Plan. While the County is the agency responsible for the preparation of the Hazardous Waste Management Plan, the Plan will be applicable to all of the cities within the County.

Assembly Bill 2948 also sets forth the required elements of a Hazardous Waste Management Plan. A plan should include, but is not limited to, the following:

- 1) An analysis of volume and type of hazardous wastes generated in the County and estimates of the expected rates of production by type of waste to the year 2000.
- 2) A description of existing hazardous waste facilities within the County including a determination of existing capacity.
- 3) An analysis of the potential for waste reduction and recycling within the County.
- 4) A consideration of the need to manage wastes generated in small quantities by businesses and households.
- 5) A determination of the need for additional facilities to manage the volumes of hazardous waste currently generated or the volumes projected to be generated in the near future.
- 6) A set of criteria for the siting of new or expanded hazardous waste facilities.
- 7) A statement of goals and policies for the siting of hazardous waste facilities and the general management of hazardous wastes.
- 8) A schedule for the implementation measures identified in the Plan.

In addition to the required elements of a Hazardous Waste Management Plan, AB 2948 also requires the County to establish an Advisory Committee to assist in the preparation of the Plan. The Advisory Committee consists of representatives of the public, industry, and environmental organizations, and at least three representatives of the cities. The responsibilities of the Advisory Committee are to advise the County and the cities on issues related to the preparation of the Hazardous Waste Management Plan. Also the Committee is required to hold informal public meetings and workshops during preparation of the Plan to provide the public with information and to receive comments. A Committee which met the requirements of the bill was formed July 1987. Information on the activities of the Committee is presented in Chapter 11.

The Board of Supervisors concurred with the purpose and goals of AB 2948 by adopting Resolution 87-92 in March 1987 (Appendix A-3). The purpose of this Resolution was to clearly set forth the intent of the County to prepare a Hazardous Waste Management Plan,

to acknowledge the purpose of such a document, and to identify the major concerns regarding hazardous waste management.

The approval process for the Hazardous Waste Management Plan differs from the process required for most County planning documents. Since the Plan will be applicable to all of the cities within the County, AB 2948 stipulates that the Plan must be approved by a majority of the cities within the County which contain a majority of the population of the incorporated area. On or before February 1, 1989, a final Hazardous Waste Management Plan which has been approved by the County and the cities must be forwarded to the State Department of Health Services. Once the State has approved the Plan, the County has 180 days to incorporate the Plan into the County's Comprehensive Plan as the Hazardous Waste Management Element, or to enact an ordinance requiring all applicable zoning, subdivision, Conditional Use Permit, and Variance decisions to be consistent with the Plan.

The cities are also required to take one of the following actions within 180 days of the Department of Health Services approval of the County Plan. Each city must: 1) incorporate applicable portions of the County Hazardous Waste Management Plan, by reference, into the city's Comprehensive Plan; or 2) adopt a city hazardous waste management plan which is consistent with the County's Plan; or 3) enact an ordinance which requires that all applicable zoning, subdivision, Conditional Use Permit, and Variance decisions are consistent with applicable portions of the County's Plan.

The framework for preparing County Hazardous Waste Management Plans is one part of AB 2948. The other sections of the legislation identify the procedures for permitting new hazardous waste facilities and establish a process for the appeal of a land use decision on hazardous waste facilities. This latter section identifies the circumstances under which an appeal is authorized, provides for the establishment of an appeal board, and identifies the required findings for reversing the local agency's land use decision. One of the required findings is a determination of consistency with the county (or city) HWMP if such a plan has been adopted by the county (or city) and approved by the DOHS. The consequences of not having an approved HWMP could be that the goals and policies of the local jurisdiction, as identified in the HWMP, are not considered in case of an appeal.

1.4 REGIONAL AND STATE HAZARDOUS WASTE MANAGEMENT PLANS

Santa Barbara County and the cities within the County are members of the Southern California Hazardous Waste Management Authority (SCHWMA). The SCHWMA is preparing a Regional Hazardous Waste Management Plan to address hazardous waste management problems on a regional basis. The major objectives of the Regional Plan include identifying regional waste management needs; developing a regional fair share program such as compensation and insurance; encouraging waste minimization throughout the region; implementing a regional action plan; and promoting citizen participation. The SCHWMA will coordinate the implementation of an action program to ensure the development of programs and the siting of facilities sufficient to safely manage the hazardous wastes generated in Southern California. Actual facility siting decisions will continue to be made by local jurisdictions. The members of the SCHWMA, however, have

agreed upon a "fair share" concept wherein every city and county in the region will accept responsibility for the management of hazardous wastes in an amount proportional to the hazardous wastes generated within the city or county.

In addition to the County and Regional Plans, a State Plan will be prepared by the State Department of Health Services in 1989. It is only through county, regional, and state-wide planning that effective and efficient hazardous waste management can be implemented throughout the state.

1.5 RELATIONSHIP TO OTHER PLANNING DOCUMENTS

The Comprehensive (General) Plan is the primary land use planning document in Santa Barbara County. The Comprehensive Plan contains the goals, policies, and land use standards for the growth, development and resource conservation in the County. State law (AB 2948) requires that the HWMP be incorporated into the Comprehensive Plan within 180 days after final approval by the State DOHS. This provision also applies to the cities. The HWMP will be adopted as an Element of the Comprehensive Plan. Incorporation of the HWMP into the Comprehensive Plan ensures that land use decisions take the goals and policies of the HWMP into consideration. The County's Solid Waste Management Plan (CoSWMP) contains a chapter on hazardous wastes. The HWMP will replace the hazardous waste element of the CoSWMP.

An Environmental Impact Report (EIR) has been prepared on the Draft HWMP in keeping with the requirements of the California Environmental Quality Act. This program EIR assessed the environmental effects of the Draft HWMP. It was prepared as a full disclosure document providing the public and decision makers with a comprehensive discussion of the potentially adverse and beneficial environmental impacts that can be expected as a result of implementing the Draft HWMP. Revisions to the Draft HWMP were made to incorporate the mitigation measures identified in the EIR. After the final approval of the revised HWMP, the EIR will be reviewed to determine whether the EIR adequately describes the impacts of the Final HWMP. A supplement or addendum to the EIR will be prepared prior to the incorporation of the HWMP into the County Comprehensive Plan if the impacts of the EIR do not adequately describe the impacts of the Final HWMP.

1.6 GOALS AND POLICIES

The County Resource Management Department began preparation of the Hazardous Waste Management Plan (HWMP) in 1987. The intent of the County in preparing the HWMP is to develop a comprehensive plan for the management of hazardous waste in the County. It is a product not only of staff effort, but of the assistance provided by the Advisory Committee and public input received throughout the preparation of the Plan. Through this combined effort, goals and policies have been developed to address the major issues associated with the management of hazardous wastes in Santa Barbara County.

The following overall goals and policies of the HWMP are based on the goals of Assembly Bill 2948.

Goals

- 1-1 To protect the health and welfare of the public, the environment, and the economy of Santa Barbara County through a comprehensive program that ensures safe and efficient management of hazardous wastes.
- 1-2 To prevent hazardous waste from being permanently disposed into land or emitted into the air or water without being processed by an economically and technically feasible technology so as to protect public health and safety and the environment.
- 1-3 To promote hazardous waste minimization to reduce the need for new hazardous waste facilities.
- 1-4 To ensure that the general public and industry is involved in the siting of hazardous waste facilities and is informed about legislation and regulations regarding hazardous waste management.
- 1-5 To identify and promote safe, effective, economical, and feasible methods for managing the hazardous waste generated in the County.

Policies

- 1-1 The County and cities shall work together with the state, the public, and industry to establish a comprehensive planning process in order to develop safe and responsible solutions for the management and disposal of hazardous waste.
- 1-2 The County and cities shall work together to develop and implement programs that reduce the amount and hazard of the hazardous wastes generated in the County.
- 1-3 The County shall continue its involvement with the Southern California Hazardous Waste Management Authority to establish comprehensive and equitable hazardous waste management on a regional basis.
- 1-4 The County and cities shall work with the Southern California Hazardous Waste Management Authority and the state to address regional and statewide planning issues as needed to achieve environmentally and economically effective hazardous waste management on local, regional, and statewide basis.
- 1-5 The County and the cities shall review the Hazardous Waste Management Plan every three years to update the data assessment and to make policy changes as appropriate. Future revisions of the Hazardous Waste Management Plan should include hazardous materials as well as wastes.

CHAPTER 2

HAZARDOUS WASTE DATA ASSESSMENT

2.1 INTRODUCTION

A key component in the development of a comprehensive hazardous waste management plan is an assessment of the types and amounts of waste generated in the County. Assembly Bill 2948 requires Hazardous Waste Management Plans to include "an analysis of the hazardous waste stream generated in the County, including an accounting of the volumes of hazardous waste produced in the County, by type of waste, and estimates of the expected rates of hazardous waste production until 1994, by type of waste." The procedures for such an analysis are outlined in the Guidelines for Preparation of Hazardous Waste Management Plans prepared by the Department of Health Services (DOHS).

The information presented in this chapter is a summary of the data included in Appendix B. The tables in Appendix B were prepared following the directions given by DOHS in the Guidelines (Technical Reference Manual, Appendices A-G) as modified by subsequent DOHS information. To prepare these tables, data on hazardous waste generation, management, and disposal were obtained from a variety of sources. These sources include:

- State Hazardous Waste Information System (hazardous waste manifested and shipped off-site in 1986);
- County Environmental Health Division data (generator permit program and underground tank program);
- Large Quantity Generators Survey conducted by Jacobs Engineering Group, Inc. in the County in September 1987;
- State Hazardous Substance Cleanup Bond Act Expenditure Plan, 1987;
- Published studies on household hazardous wastes;
- DOHS Guidelines for estimating waste from Small Quantity Generators;
- Santa Barbara Area Planning Council: Forecast 85; and,
- California Population Research Unit census data.

The data analysis includes estimates of current and projected waste generation by large quantity generators, small quantity generators, and households. It also includes estimates of waste generation due to the cleanup of contaminated sites and a needs assessment for hazardous waste treatment and disposal capacity for wastes produced within the County. The baseline year for evaluating hazardous waste generation is 1986. The projections were done to the year 2000.

The data on hazardous waste generation and treatment capacities are discussed in terms of waste groups and generalized treatment methods (Table 2-1). Assignment of a specific waste to a waste group follows the procedures given by DOHS. The waste groups and treatment methods given in Table 2-1 are used throughout this chapter.

2.2 CURRENT HAZARDOUS WASTE GENERATION (1986)

Hazardous wastes are generated from a wide variety of activities in our society ranging from large industrial processes to home cleaning activities. The sources of hazardous waste generated in the County can be divided into three categories. They include industrial waste (including both large and small quantity generators), household waste, and cleanup waste (from leaking underground tanks and other contaminated sites). In 1986, an estimated 30,536 tons of wastes were produced. Of this amount, approximately 53% was generated by industries, 4% by households, and 43% from cleanup activities (Table 2-2). Hazardous wastes generated by small quantity generators, households, and contaminated sites are discussed in more detail in Chapters 5, 6, and 10 respectively.

The baseline year for the data analysis is 1986. This year was chosen because it was the most recent year for which complete data were available. Estimating the amount of waste generated in 1986 required a number of assumptions; the data discussed in this chapter, therefore, should be taken to indicate general amounts and not specific quantities. The need for more recent and more accurate data is critical and a recommendation is made in the policies and implementation programs at the conclusion of this chapter to establish a comprehensive hazardous waste data management system in the County.

2.2.1 Industrial Hazardous Waste Generation

In 1986, 16,226 tons of hazardous wastes were generated from industrial sources in the County. This estimate includes wastes from both large and small quantity generators. The types of industrial wastes generated in the County are shown on Table 2-2. The largest waste group produced in 1986 was metal-containing liquids which comprised 31% of the industrial waste. Although most of this waste came from a single large generator (4,460 or 88% of the 5,080 tons generated), 19 generators produced metal-containing liquids. The largest of these generators were in the oil and gas, or electrical and electronic industry. Most of this waste stream was transported to disposal sites outside of the county.

Other large waste groups generated in 1986 include miscellaneous wastes (22%), waste oil (10%), and non-metallic inorganic sludge (9%). Miscellaneous wastes include a wide variety of hazardous wastes such as empty containers, asbestos-containing wastes, laboratory wastes, gas scrubber wastes, and other waste from small quantity generators. The largest category of miscellaneous waste generated in 1986 was gas scrubber waste (64% of miscellaneous waste). This waste was generated by the oil and gas industry as a result of installation of air pollution control devices. The second largest source of miscellaneous waste (24%) was automotive dealers, service stations, and auto repair shops. In total, there were hundreds of generators of miscellaneous wastes in the County.

Waste oil is a commonly generated hazardous waste. Any activity which involves the use of automobiles and many other types of equipment generate waste oil. The largest source of waste oil in 1986 was Vandenberg Air Force Base; they generated 44% of the 1,554 tons produced in 1986. Following the military, the next largest group of producers was the oil and gas industry (33%).

Ninety-nine percent of the non-metallic inorganic sludge generated in 1986 were produced by the oil and gas industry. Very small amounts of this waste, however, were produced by an additional 12 generators, including the military and the electrical and electronic industry.

As is indicated in the above discussion, most of the hazardous waste in the County was generated by a few types of industries. The types of industries were evaluated based on Standard Industrial Classification (SIC) codes which include schools, hospitals, governments, and the military as well as the various types of industries. Table 2-3 shows the amount of waste generated by SIC code. Although wastes were generated by 26 different SIC groups, 90% of the waste was generated by six types of industries. These include: oil and gas industry (67%), the military (5%), electronic industry (5%), utilities (5%), automotive (4%), and business services (3%).

There are over 1,000 hazardous waste generators in the County. Most of the hazardous waste, however, was produced by a small number of large generators. The largest generator in the County produced 33% of the 16,880 tons of industrial hazardous waste generated in 1986; the three largest generators produced 53% of the industrial hazardous waste; and the eleven largest generated 73% of the industrial hazardous waste. These large generators include members of the oil and gas industry, the military, and the electronic and electrical industry. There are approximately 70-80 large quantity generators in the County. (Large quantity generators are defined by State law as those generators producing more than 1,000 kilograms (2,200 pounds) per month.) Small quantity generators (SQGs) are the most numerous type of generator in the County. SQGs, however, only generate a small percentage (approximately 5%) of the industrial waste produced in the County. SQGs are discussed in more detail in Chapter 5.

2.2.2 Household Hazardous Waste

The amount of hazardous waste generated by households was based on a previous study which estimated an annual average of 16.6 pounds of hazardous waste per individual household (City of Albuquerque, 1983). Households account for approximately 4% of the total amount of hazardous wastes generated in the County (Table 2-2). The total amount generated from households is 1,070 tons. Of this, the largest component is waste oil (708 tons), organic liquids (antifreeze; 205 tons), and paint (113 tons). These three waste groups account for 96% of the hazardous wastes estimated to be generated from households. A more detailed discussion of household hazardous wastes is given in Chapter 6.

2.2.3 Hazardous Wastes from Cleanup Activities

Hazardous wastes from cleanup activities account for approximately 43% (13,240 tons) of the waste generated in 1986 (Table 2-2). These wastes represent, in most part, one-time

events. Contaminated soils result from hazardous waste site cleanup activities including leaking underground tanks, abandoned hazardous wastes sites, and accidental spills. There were approximately 40 generators of contaminated soils in 1986. Approximately half of these generators produced no other hazardous wastes. Wastes grouped as PCBs and Dioxins include, for the most part, PCB contaminated soils (no dioxins were generated in the County). There were 12 generators of PCBs in 1986, with the five largest accounting for 99% of the waste. All of this waste was exported from the County.

2.2.4 Hazardous Wastes Exported from Santa Barbara County

The hazardous wastes generated in the County are shipped to a number of sites within California, and in some cases, out of state. Of the 30,536 tons generated in 1986, 77% (23,613 tons) was exported from the County. Most of the waste exported in 1986 went to disposal facilities in Kern and Kings County (Table 2-4). The destination in Kern County was Petroleum Waste Inc., a Class I hazardous waste facility that only accepts waste from the oil and gas industry. The three largest waste groups exported to Petroleum Waste Inc. were metal-containing liquids (4,350 tons), non-metal inorganic sludge (1,390 tons) and miscellaneous wastes (1,340 tons). As discussed in section 2.2.1 above, these were the major types of wastes generated in the County in 1986. Petroleum Waste Inc. received 46% of the waste exported in 1986.

Chemical Waste Management Inc. is a Class I hazardous waste facility in Kings County. Approximately 41% of the waste exported from Santa Barbara County in 1986 was sent to Chemical Waste Management Inc. Although a diversity of waste types were sent there, 92% of the 9,740 tons sent to Chemical Waste was PCBs. The next largest waste group was metal-containing liquids, 390 tons were exported there.

The remaining 3,087 tons of wastes exported in 1986 were sent to over 10 different counties and out of the state. In some cases the destination of the wastes is unknown due to incomplete or erroneous record keeping. In other cases, such as when wastes were shipped out of the state, state and local jurisdictions are unlikely to have a record of the waste. A wide variety of types of wastes were exported (Table 2-5). In addition to the disposal sites in Kings and Kern County, many of the wastes were sent to treatment or recycling and recovery facilities located throughout the state.

2.2.5 Hazardous Wastes Imported into Santa Barbara County

Although a large percentage of the waste generated in the County was exported, this amount is small relative to the tons of waste imported to the County (Table 2-6). In 1986, 131,440 tons were imported. These wastes were all shipped to Casmalia Resources, a Class I hazardous waste facility located in northern Santa Barbara County. Wastes imported to Santa Barbara County originated in 51 different counties in California and from areas out of state. The single largest source was Los Angeles County which imported 60,570 tons, or 46% of the waste shipped into Santa Barbara County in 1986. Counties in Southern California accounted for a total of 69% of the waste imported to Santa Barbara. Kern and Kings Counties, the destination of much of the waste exported from Santa Barbara, imported a total of 750 tons, less than 1% of the waste that came into Santa Barbara County in 1986.

Wastes from all 17 waste groups were imported in 1986 (Table 2-7). The largest categories were contaminated soils (19%), miscellaneous wastes (18%), and metal-containing liquids (15%). All three of these waste groups were also exported from Santa Barbara County in 1986. This demonstrates the need to develop programs so that hazardous waste can be managed close to the source of generation to minimize the transportation of these hazardous substances.

2.3 PROJECTED HAZARDOUS WASTE GENERATION

As required by AB 2948 and the DOHS Guidelines, a projection of hazardous waste generation was made to the year 2000. The industrial hazardous waste projection was done using industrial growth projections based on the employment projections in Forecast 1985. Changes in the amount of hazardous waste generated from households were estimated based on projected population changes. An estimate of the volume of hazardous wastes that will be generated from site cleanups was made based on an estimate of the number of contaminated sites in the County assuming a 10-year period for cleanup of existing sites. All projections were done using the 17 waste groups identified previously and SIC codes.

There are many factors which may interact to affect the accuracy of the projections of waste generation and the estimation of the need for hazardous waste facilities. The projections are based on current regulations and economic factors. It is possible that new legislation will change the types of waste streams that are designated hazardous. Also, new technologies and waste management practices might develop which would effect the assessment of the need for hazardous waste facilities. Current and expected regulations are changing the hazardous waste management practices of industry. The high cost of disposal and the planned land ban of untreated hazardous wastes are pressures that may result in a decrease in waste generation. Other factors, such as an increase in the awareness of what constitutes hazardous waste, could result in an increase in waste streams over what is estimated at this time. In particular, the projection of wastes from contaminated sites may increase as more sites are identified. Increases in the use of onsite treatment, however, may decrease the amount of wastes shipped to treatment and disposal facilities. Market demand fluctuations may change the projected growth rates of certain industries. This in turn could change the amount and type of hazardous waste generated. There will be a continual need to revise and update data on the generation of hazardous waste if the County is to develop and maintain an effective hazardous waste management program.

2.3.1 Projected Industrial Hazardous Waste Generation

The amount of hazardous waste generated from industrial sources is projected to increase from 16,226 tons per year to 29,290 tons per year by the year 2000 (Table 2-8). This projection assumes there are no major changes in the way industry manages hazardous waste and it does not include the implementation of increased waste minimization procedures. While the total increase from 1986 to 2000 is 80%, the percent increase within each waste group varies from 0% to 103%. This variation reflects the different projected rates of growth of the various industries in the County. There is, however, no change in the ranking of the major waste groups. Metal containing liquids, miscellaneous wastes, non-metallic

inorganic sludge and waste oil will continue to be the largest waste streams generated in the County.

2.3.2 Projected Household Hazardous Waste

The amount of hazardous waste generated by households was estimated based on an average amount of waste per household. Therefore, changes in the projected generation of household hazardous waste are directly proportional to changes in the population. The amount of household hazardous waste is expected to increase by 22% from 1987 to 2000, from 1,070 tons to 1,303 tons a year (Table 2-9). Further discussion of household hazardous waste is given in Chapter 6.

2.3.3 Projected Hazardous Wastes from Contaminated Sites

Hazardous waste is generated whenever a contaminated site is cleaned up. To estimate the current and projected quantity of waste from contaminated sites, information was used from the State Bond Expenditure Plan and from the County Environmental Health Division (estimates of the number of leaking underground tanks, other known contaminated sites, and the annual amount of waste generated from small industrial spills). The total quantity of contaminated soils estimated in the County is given on Table 2-10. Estimates are provided for each of the sources of cleanup wastes. To estimate the amount of waste generated on an annual basis, it was assumed that all the identified contaminated sites would be cleaned up over the next ten years (i.e. by 1998). The amount of contaminated soils generated in the year 2000, therefore, is estimated as 100 tons based on the projected amount of hazardous waste from small industrial spills (all other contaminated sites having been cleaned up). Issues associated with contaminated sites are discussed in more detail in Chapter 10.

2.3.4 Projected Generation With Waste Minimization

A primary goal of the Tanner Bill (AB 2948) and of this Plan is to reduce the amount of hazardous waste that is generated through implementation of waste minimization programs. To estimate the effect of waste minimization on future waste streams, two methods were used to adjust the amount of waste generated in the year 2000. The first method used estimates of waste minimization based on information from the large quantity generators in the County. The second approach was to use the estimates suggested in the DOHS Guidelines.

The projected amount of waste without waste minimization and the two estimates that include waste minimization are given on Table 2-11. The lowest estimate of waste generation in the year 2000 is the estimate based on the information from the County's major generators. The effect of waste minimization in this case is to decrease the projection from 30,693 to 10,635 tons a year, a 65% reduction. In comparison, the projections based on the DOHS estimate of waste minimization shows a smaller decrease in the amount of hazardous waste generated. This estimate decreases the projection from 30,693 to 26,482 tons a year, a 14% reduction.

The effect of waste minimization on the projections varies for the different waste groups. From the projections based on information from the County's generators, the effectiveness of waste minimization ranges from 5% for waste oil to 98% for metal-containing liquids. For the projections using the DOHS Guidelines, the values range from 1% for non-halogenated solvents and non-halogenated organic sludge and solids to 25% for a number of waste groups such as metal-containing liquids and sludge, cyanide and metal liquids, and non metallic inorganic liquids and sludge. The only waste group for which the DOHS estimate of waste minimization is higher is waste oil. For this waste group, local industry estimated a 5% decrease whereas DOHS estimated an 8% decrease.

2.4 TREATMENT, STORAGE, AND DISPOSAL CAPACITY

An inventory of specified treatment, storage, and disposal facilities (TSDFs) was made to assess the available treatment, storage, and disposal capacity within the County. Specified facilities are offsite hazardous waste facilities which serve more than one generator of hazardous waste. (These are also referred to as commercial, or offsite facilities.) Two specified hazardous waste facilities are found in Santa Barbara County: the County Agricultural Commissioner Storage Facility and Casmalia Resources Hazardous Waste Facility. The County Agricultural Commissioner Facility has a TSDF permit for storage. It has limited capacity for storage of hazardous wastes in drums. The capacity of this facility is 2.4 tons/year. In 1986, the average monthly storage was 0.14 tons. This facility only accepts pesticide wastes from households, not from commercial generators (e.g. farmers). Because of its small size and limited use, this facility is not considered further.

Casmalia Resources is a Class I hazardous waste facility located in northern Santa Barbara County. The facility has operated a number of different treatment and disposal units for hazardous wastes since it began operation in 1973. A history of the waste management processes and environmental issues is given in Casmalia Resources Hazardous Waste Management Facility Environmental Assessment (Santa Barbara County, 1985). It is difficult to specify the existing capacity at Casmalia Resources because a number of operational changes are being implemented. In particular, it is misleading to present the treatment and disposal capacity that was available in 1986, the baseline year for the data analysis, as the current available capacity because significant changes have occurred between 1986 and the present. Examples of these changes include the shut down of the Zimpro wet air oxidation unit and the installation of an acid neutralization unit. The following analysis and the data assessment tables in this chapter and in Appendix B use the most recent assessment (1988) of treatment and disposal capacity at Casmalia Resources. The reported quantity of waste actually treated and disposed, however, is based on 1986 data, the most recent year for which data are available.

The California Partnership for Safe Hazardous Waste Management prepared an analysis of offsite hazardous waste facilities in California (California Partnership, 1988). Their report includes a description of current hazardous waste management capacity and a projection of future capacity at four key commercial hazardous waste management facilities. The four facilities covered in the report include Chemical Waste Management's Kettleman Hills Facility (Kings County), International Technology Corporation's Vine Hill/Baker Facility

(Contra Costa County) and Panoche's Facility (Solano County), and the Casmalia Resources Facility (Santa Barbara County). These four facilities manage 49% of the 1.5 million tons of hazardous wastes that were shipped offsite in California in 1986. The assessment for each facility includes data on current use and projections of future capacity. The sections dealing with Casmalia Resources are included as Appendix B-2 of the HWMP and are summarized below.

At the present time, Casmalia Resources' treatment and disposal units for hazardous waste include landfills and an acid neutralization unit. Casmalia Resources is in the process of closing the surface impoundments, which are not lined, and is no longer treating or disposing untreated liquid hazardous waste into the ponds. There are four landfills at the facility. Each of the landfills is used for the disposal of a specific waste stream: solvents and pesticides; acid wastes; alkalines and cyanides; and heavy metal and heavy metal sludge. Both bulk and containerized solids are deposited at these landfills. The remaining capacity of these landfills is approximately 1,613,000 tons. At the current rate of disposal, the life expectancy of these landfills is approximately 10 years, except for the solvent and pesticide landfill which may reach capacity in three years.

The acid neutralization unit treats acid and alkaline liquid wastes. This unit consists of a series of tanks which neutralize liquid wastes. This process generates two residual waste streams, a solid waste which contains metals, and a liquid waste which is neutral or slightly acidic. The solid waste is solidified and disposed in the heavy metal landfill. The residual liquid waste is discharged to a surface impoundment. The acid neutralization unit has a capacity of 36,000 tons/year.

Casmalia Resources has submitted a modernization plan to the State Department of Health Services. The County has challenged Casmalia Resources and the Department of Health Services' original position that the County had no permitting authority for the proposed modernization plan. Although the legal issues have not been resolved, Casmalia Resources has filed a Notice of Intent (NOI) with the State Office of Permit Assistance and indicated their intent to submit an application for their modernization plan to the County. The NOI triggers the permitting procedures required by AB 2948. If the modernization plan is implemented, Casmalia Resources will expand its landfill capacity to 4.13 million tons and its acid neutralization unit to 144,000 tons/year by the early 1990s.

2.5 TREATING, STORAGE, AND DISPOSAL NEEDS ANALYSIS

Assembly Bill 2948 requires "a determination of the need for additional hazardous waste facilities to properly manage the volumes of hazardous wastes currently produced or expected to be produced during the planning period." The procedure for such a needs analysis is outlined in the DOHS Guidelines. Need is defined as the additional capacity, beyond what currently exists, to treat and dispose of all the hazardous wastes generated in the County. Need for hazardous waste facilities is evaluated in terms of the seven generalized treatment methods given on Table 2-1 and the amount of residual remaining after treatment that must be disposed. The first step in the needs analysis is to determine what type of treatment is appropriate for each waste group. This information was provided by DOHS in the Guidelines and is shown on Table 2-12. For most waste groups, a primary

and an alternative treatment method is identified. The next step is to assess the total capacity needed for each type of treatment. For example, using the primary treatment methods shown on Table 2-12, the total annual capacity needed for oil recovery treatment would be the amount of waste oil generated plus the amount of oily sludge generated in that year. Since oil recovery is a treatment method that produces a 20% residual, the amount of residual produced in the above example would be 20% of the amount waste oil treated plus 20% of the amount oily sludge treated.

2.5.1 Needs Analysis for 1986

The needs assessment for the waste stream generated in 1986 was done for two scenarios. In the first scenario, the primary treatment method (as shown on Table 2-12) was used for each waste group. In the second scenario, recycling or recovery was the assumed treatment method whenever such a treatment method was available for a waste group, regardless of the treatment method being a "primary" or "alternative" method. If recycling or recovery was not an option for a given waste group, the primary treatment method identified on Table 2-12 was used. This second scenario reflects implementation of the hazardous waste management hierarchy as identified in the AB 2948 and this HWMP. This hierarchy requires that recycling and recovery be used preferentially to other treatment methods such as aqueous treatment or incineration. (The hazardous waste management hierarchy is discussed in Chapter 4 - Waste Minimization). The estimated capacity needed to treat all the hazardous waste generated in the County in 1986 is given on Table 2-13 for both of the scenarios described above. The residuals remaining after treatment are also shown for both scenarios. Comparing the results of the two scenarios shows that maximizing the use of recycling as a treatment method not only reduces the need for other treatment methods, it also reduces the need for a residual repository because the total amount of residual generated is also reduced.

The next step in the needs analysis is to compare the estimates of the amount of capacity needed to treat and dispose of all the hazardous waste generated in the County with the existing treatment and disposal capacity. (Existing treatment and disposal capacity is discussed in section 2.4.) The existing capacity at Casmalia Resources far exceeds the current capacity needed in the County for aqueous treatment - metals (i.e. the acid neutralization unit) and for landfilling. However, there is no existing treatment capacity in the County for incineration, recycling or recovery, or stabilization.

The final step in the needs analysis is to evaluate the need for additional hazardous waste facilities based on the need for additional treatment capacity beyond what is currently available. In the Guidelines, DOHS identified key characteristics of the various types of hazardous waste facilities. This information includes an estimate of the annual capacity of small and large facilities of different treatment types. The estimated annual capacity for small facilities is given on Table 2-1 for each of the different treatment methods. Comparing the need for the different treatment methods as given on Table 2-13 with the estimated annual capacity for a small facility as given on Table 2-1 shows that the only treatment methods for which there might be sufficient waste generated to warrant a treatment facility are incineration and other recycling. Most of the need for incineration, however, comes from the PCB waste stream. This waste was generated from cleanup activities and is not

projected to be an ongoing waste stream in the County. All of the waste groups other than PCBs that were assumed to be treated by incineration in scenario 1, using the primary treatment method, could also be recycled as calculated in scenario 2 (Table 2-13). Therefore, there does not seem to be sufficient wastes to support an incineration facility in the County. The only type of facility for which there may be an adequate waste stream to justify a small hazardous waste facility beyond what currently exists in the County is a recycling facility. Even this, however, is open to question because, in many cases, what is referred to as "other recycling" may not require a facility but includes onsite processes such as biodegradation, oxidation, or aeration. The need for a hazardous waste facility to treat the wastes generated in the County cannot be evaluated conclusively at this time but should be evaluated at the time an application for such a facility is made to the County.

2.5.2 Projected Needs Analysis

A similar analysis was repeated for the hazardous waste stream projected for the year 2000. As discussed in Section 2.3, several projections were made, each with a different assumption regarding the amount of waste minimization that would occur. To assess the need for treatment capacity in the year 2000, two of the projections were used, those yielding the highest and lowest projection, so that a wide range of values could be evaluated. The two projections used were the projection of the amount of waste generated without assuming any waste minimization, the highest estimate, and the projection which incorporated industry's estimate of waste minimization, the lowest estimate. For each of these projections, the two scenarios described above were repeated. In the first scenario, the primary treatment method (shown on Table 2-12) was used for each waste group. In the second scenario, recycling or recovery were used whenever they were a possible treatment method, either as the primary treatment method or the alternative treatment method. If neither recycling or recovery were an option, the primary treatment method was used. The estimated need for each treatment method under both scenarios and for both projections is shown on Table 2-14. As can be seen on that table, the estimated need for different treatment methods varies considerably depending on the assumptions made for the projections and for the treatment assignments.

The final step of the needs analysis is to evaluate the estimated need for treatment capacity to determine if additional hazardous waste treatment facilities will be needed to treat future waste generated in the County. Looking at the estimates given on Table 2-14, there are only two cases for which the estimated need would be sufficient to warrant a small facility. Both these cases occur for the projection that does not include waste minimization. Under scenario 1, using the primary treatment methods, 17,201 tons of waste would need to be treated by aqueous treatment. Additional treatment capacity of this type is not needed in the County, however, if the acid neutralization unit at Casmalia Resources remains operational at its current capacity (i.e. 36,000 tons/year). The second case for which the estimated need for treatment capacity may be large enough to warrant a small treatment facility is for recycling in scenario 2 for the projection that did not include waste minimization. In this case, the large amount of recycling required, 15,813 tons, is greater than the minimum amount identified for a recycling facility. Since there is no recycling facility in the County, such a facility might be needed by the year 2000 if waste minimization is not implemented.

In addition to treatment capacity, estimates were made of the amount of residual generated in each of the above scenarios. Only in the case of the projection that did not include waste minimization and for which the primary treatment method was used, is the amount of residuals generated, 14,000 tons, enough to warrant a small residual repository. If Casmalia Resources implements their proposed modernization plan, there will be an excess capacity for residuals in their landfill, based on what is projected to be generated in the County. If Casmalia Resources does not implement their modernization plan, their existing landfills are expected to have reached capacity prior to the year 2000. In this case there will be a need for disposal of residuals in the County but only under scenario 1 (without waste minimization) would there be sufficient need to warrant a residual repository.

Based on this analysis, it is clear that waste minimization can play a critical role in the need for hazardous waste facilities. When estimates of waste minimization are incorporated into projections of future hazardous waste generation, the amount of waste generated is not sufficient to justify siting any type of hazardous waste facility in the County (using the DOHS estimate of throughput for small hazardous waste facilities). Small amounts of waste would still need to be treated and disposed but these could be handled through onsite facilities or as part of a regional facility. When waste minimization is not incorporated into the projections of future waste generation, there may be enough waste generated to warrant a small aqueous treatment facility, recycling facility, and residual repository. If Casmalia Resources continues to operate, additional facilities for aqueous treatment and residual disposal would not be needed but a need may arise for a small recycling facility.

The need for a hazardous waste facility must be evaluated for each proposed project. The data available at the present are not adequate to make a conclusive determination of the size and type of hazardous waste facilities needed to manage the wastes that may be generated in the County in future. It is unlikely, however, that the generation of wastes in the County will be large enough to support any given type of a specified hazardous waste facility. Nonetheless, the County's hazardous waste, if not managed within the County, will contribute to a region or state-wide need for treatment and disposal capacity. Therefore, the County, through its participation in the SCHWMA has committed to siting its regional "fair share" of facilities. The siting of all specified hazardous waste facilities must be consistent with the fair share principles, as adopted by the SCHWMA and incorporated herein by reference (see Table 2-15).

2.6 GOALS AND POLICIES

An assessment of the types and amount of hazardous waste generated in the County is essential for effective hazardous waste management planning. The data analysis done as part of the HWMP includes estimates of current and projected waste generation by industry and households, and from the cleanup of contaminated sites. This analysis shows that the need for hazardous waste facilities to manage wastes generated in the County depends on the amount of waste minimization and the type of treatment used. The data analysis was limited due to the lack of available data on hazardous waste generation. There is an ongoing need for a comprehensive data base in the County.

Goals

- 2-1 To have a comprehensive data base for information on hazardous waste generation and hazardous waste treatment and disposal capacity within the County.

Policies

- 2-1 No specified hazardous waste facility shall be sited within the County or cities unless needed. The need for a specified hazardous waste facility project must be established by the project applicant and determined by the local jurisdiction at the time of the local land use decision, consistent with fair share principles based on the responsibility of local governments to assure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within their jurisdiction. Conformance with the siting criteria in this Plan does not in itself establish need. The following factors shall be considered in determining the need for a facility:
- a) the extent to which the proposed facility would exceed the county or city's "fair share", as defined by reference to the principles and formulas adopted by the Southern California Hazardous Waste Management Authority;
 - b) the economic viability and the public health, safety, and environmental risks associated with the proposed facility and alternative operating capacities of the proposed facility;
 - c) the extent to which the county or city has or, within a reasonable amount of time, will have facilities to manage county or city generated hazardous wastes; and
 - d) the extent to which intergovernmental or private agreements demonstrate that one or more California counties or cities have facilities, or will accept the siting of new or expanded facilities, to manage the county or city generated hazardous wastes.
- 2-2 All businesses that generate hazardous wastes including home occupations, but excluding normal household activities, shall provide the County with information regarding the type, amount and management of all hazardous wastes generated. Such information shall be required as part of the EHD hazardous waste generator permit program and shall be updated annually.
- 2-3 All hazardous waste treatment, storage, and disposal facilities in the County shall provide the County with information regarding their operations and treatment, storage, and disposal capacity. Such information shall be updated annually.

Implementation Programs

2-A Comprehensive Data Management System

Continue to work toward a comprehensive data management system that includes: data on hazardous waste management such as waste generation, storage of hazardous waste, underground tanks, and contaminated sites; provision for maintaining current data; and procedures for collecting consistent information. The program should interrelate other existing programs using a computerized data base as much as is feasible. As an example, information could be gathered through the EHD hazardous waste generator program. Standard information, such as Standard Industrial Classification (SIC) codes and state identified waste groups, should be used so that data are comparable. This program should reference and integrate as appropriate other data collection programs such as those recommended for small quantity generators (implementation program 5-A), and the waste stream analysis (implementation program 6-E). A data management coordinator is needed in the Environmental Health Division to coordinate development and maintenance of the program.

2-B Permit Process Guidelines for Generators

Prepare guidelines identifying the permit process for generators of hazardous waste. Procedures should be developed for both discretionary and ministerial projects and should address both environmental health and land use permits. This should include proper review of hazardous waste generator projects by the Environmental Health Division prior to land use approval by the County or cities.

TABLE 2-1

WASTE GROUPS AND GENERALIZED TREATMENT METHODS¹

A) WASTE GROUPS

Organic Liquids

Waste Oil
 Halogenated Solvents
 Non-Halogenated Solvents
 Organic Liquids
 Pesticides
 PCBs/Dioxins

Organic Sludge and Solids

Oily Sludge
 Halogenated Organic Sludge & Solids
 Non-Halogenated Organic Sludge & Solids
 Dye & Paint Sludge & Resin Wastes

Inorganic Liquids

Metal-Containing Liquids
 Cyanide & Metal Liquids
 Non-Metallic Inorganic Liquids

Inorganic Sludge and Solids

Metal-Containing Sludge
 Non-Metallic Sludge
 Contaminated Clay, Soil, & Sand
 Miscellaneous Wastes

B) GENERALIZED TREATMENT METHODS

	<u>Residual Remaining After Treatment(%)</u>	<u>Estimated Annual Capacity of a Small Facility (tons)</u>
Aqueous Treatment - Organics	10	10-12,000
Aqueous Treatment - Metals	50	10-12,000
Incineration	10	5-10,000
Solvent Recovery	20	10-15,000
Other Recycling	20 ²	10-15,000
Oil Recovery	20	10-15,000
Stabilization	120	5-15,000
Disposal - Residual Repository	--	10-20,000

¹ From the Guidelines for the Preparation of Hazardous Waste Management Plans (1987)

² Estimated based on average residual estimate for recycling and recovery.

TABLE 2-2

HAZARDOUS WASTE GENERATION

SANTA BARBARA COUNTY¹

1986

AMOUNT OF WASTE GENERATED (tons/yr)

<u>WASTE GROUP</u>	<u>Industrial</u>	<u>Cleanup</u>	<u>Households</u>	<u>TOTAL</u>
Waste Oil	1,554		708	2,253
Halogenated Solvents	385		23	408
Non-Halogenated Solvents	769			769
Organic Liquids	779		205	984
Pesticides	248		21	269
PCBs & Dioxins	10	9,175		9,184
Oily Sludge	78			78
Halogen. Org. Sludge & Solids	42			42
Non-Hal. Org. Sludge & Solids	1,115			1,115
Dye & Paint Sludge & Resins	69		113	182
Metal-Containing Liquids	5,080			5,080
Cyanide & Metal Liquids	10			10
Non-Metallic Inorg. Liquids	1,071			1,071
Metal-Containing Sludge	63			63
Non-Metallic Inorg. Sludge	1,460			1,460
Contaminated Soil	0	4,066		4,066
Miscellaneous Wastes	<u>3,502</u>	<u> </u>	<u> </u>	<u>3,502</u>
TOTAL	16,226	13,240	1,070	30,536

¹ From Appendix B, Table I. Industrial waste includes waste shipped offsite and estimates of small quantity generators' waste corrected for route service haulers and out-of-state shipments.

TABLE 2-3

**INDUSTRIAL HAZARDOUS WASTE SHIPPED OFFSITE
BY TYPE OF GENERATOR¹
SANTA BARBARA COUNTY
1986**

<u>Standard Industrial Classification</u>		<u>Amount Generated (tons/yr)</u>
01	Agricultural Production-Crops	76
07	Agricultural Services	158
13	Oil & Gas Extraction	11,238
15	General Building Contractors	16
24	Lumber and Wood Products	21
27	Printing and Publishing	54
28	Chemicals and Allied Products	47
33	Primary Metal Industries	13
34	Fabricated Metal Products	7
35	Machinery	151
36	Electrical and Electronic Equipment	582
38	Instruments and Related Products	39
39	Miscellaneous Manufacturing Industries	276
45	Transportation by Air	8
48	Communication	17
49	Electric, Gas, and Sanitary Services	861
50	Wholesale Trade - Durable Goods	59
55	Automotive Dealers and Service Stations	374
72	Personal Services	39
73	Business Services	466
75	Auto Repair, Services, and Garages	726
80	Hospitals	130
82	Educational Services	52
89	Miscellaneous Services	8
91	General Government	117
96	Military	921

¹ From Appendix B, Table J, including both large and small quantity generators (not corrected for route service haulers and out-of-state shipments).

TABLE 2-4
DESTINATION OF HAZARDOUS WASTES EXPORTED
FROM SANTA BARBARA COUNTY¹
IN 1986

<u>Receiving County</u>	<u>Amount (Tons)</u>	<u>Percent of Export</u>
Contra Costa	34	
Fresno	88	*
Imperial	292	*
Kern (Petroleum Waste Inc.)	10,781	46
Kings (Chemical waste Mgmt. Inc.)	9,745	41
Los Angeles	751	3
Orange	8	*
Sacramento	4	*
San Bernardino	58	*
San Mateo	95	*
Santa Clara	28	*
Ventura	18	*
Unknown	1,640	7
Other (primarily out-of-state)	<u>71</u>	*
 TOTAL	 23,613	

* indicates less than one percent

¹ Appendix B, Table F

TABLE 2-5

**TYPES AND AMOUNTS OF HAZARDOUS WASTE EXPORTED
FROM SANTA BARBARA COUNTY¹
IN 1986**

<u>Waste Group</u>	<u>Tons</u>	<u>% of the County's Generation (Table 2-2)</u>
Waste Oil	1,331	59
Halogenated Solvents	154	38
Non-Halogenated Solvents	893	86
Organic Liquids	342	35
Pesticides	74	28
PCBs & Dioxins	9,124	99
Oily Sludge	43	55
Halogenated Organic Sludge & Solids	1	2
Non-Halogenated Organ. Sludge & Solids	1,067	96
Dye & Paint Sludge & Resins	37	20
Metal-Containing Liquids	5,004	99
Cyanide & Metal Liquids	2	20
Non-Metallic Inorganic Liquids	498	7
Metal-Containing Sludge	3	5
Non-Metallic Inorganic Sludge	1,459	100
Contaminated Soil	2,000	49
Miscellaneous Wastes	<u>1,581</u>	<u>45</u>
TOTAL	23,613	77

¹ From Appendix B, Tables F (including out-of-state shipments) and I.

TABLE 2-6
SOURCE OF HAZARDOUS WASTES IMPORTED
TO SANTA BARBARA COUNTY¹
IN 1986

<u>Generating County</u>	<u>Amount (Tons)</u>	<u>Percent of Import</u>
Southern California Region		
Imperial	50	-
Los Angeles	60,570	46
Orange	11,240	9
Riverside	3,910	3
San Bernardino	2,700	2
San Diego	6,090	5
Ventura	4,890	4
Other Areas		
Alameda	3,360	3
Contra Costa	3,070	2
Sacramento	1,170	1
San Mateo	1,780	1
Santa Clara	9,350	7
Santa Cruz	1,550	1
Other Counties	7,170	5
Unknown	<u>14,540</u>	11
TOTAL	131,440	

¹ From Appendix B, Table E

TABLE 2-7

**TYPES AND AMOUNTS OF HAZARDOUS WASTE IMPORTED
TO SANTA BARBARA COUNTY¹
IN 1986**

<u>WASTE GROUP</u>	<u>TONS</u>
Waste Oil	3,970
Halogenated Solvents	3,010
Non-Halogenated Solvents	2,480
Organic Liquids	700
Pesticides	920
PCBs & Dioxins	240
Oily Sludge	12,040
Halogenated Organic Sludge & Solids	830
Non-Halogenated Organic Sludge & Solids	8,510
Dye & Paint Sludge & Resins	9,340
Metal-Containing Liquids	19,380
Cyanide & Metal Liquids	50
Non-Metallic Inorganic Liquids	13,510
Metal-Containing Sludge	4,200
Non-Metallic Inorganic Sludge	2,460
Contaminated Soil	25,450
Miscellaneous Wastes	<u>24,350</u>
TOTAL	131,440

¹ From Appendix B, Table E

TABLE 2-8
CURRENT AND PROJECTED GENERATION
OF INDUSTRIAL HAZARDOUS WASTE¹
SANTA BARBARA COUNTY

AMOUNT OF WASTE GENERATED (tons/yr)

<u>WASTE GROUP</u>	<u>1986</u>	<u>2000</u>	<u>% Increase</u>
Waste Oil	1,545	2,239	45
Halogenated Solvents	385	462	19
Non-Halogenated Solvents	769	1,428	86
Organic Liquids	778	1,214	56
Pesticides	248	256	3
PCBs & Dioxins	10	15	50
Oily Sludge	78	121	55
Halogenated Organic Sludge & Solids	42	53	26
Non-Halogen. Organic Sludge & Solids	1,115	2,216	99
Dye & Paint Sludge & Resins	69	93	35
Metal-Containing Liquids	5,080	9,898	92
Cyanide & Metal Liquids	10	14	40
Non-Metallic Inorganic Liquids	1,171	2,088	78
Metal-Containing Sludge	63	90	43
Non-Metallic Inorganic Sludge	1,460	2,962	103
Contaminated Soil	0	0	0
Miscellaneous Wastes	<u>3,502</u>	<u>6,142</u>	<u>75</u>
 TOTAL	 16,226	 29,290	 80

¹ Quantities of wastes shipped offsite only (Appendix B, Tables I and N-1)

TABLE 2-9

**CURRENT AND PROJECTED HOUSEHOLD HAZARDOUS WASTE GENERATION
IN SANTA BARBARA COUNTY¹**

<u>WASTE GROUP</u>	AMOUNT GENERATED (tons/yr)	
	<u>1987</u>	<u>2000</u>
Waste Oil	708	862
Halogenated Solvents	23	28
Organic Liquids	205	250
Pesticides	21	25
Dye, Paint Sludge, and Resin Wastes	<u>113</u>	<u>138</u>
TOTAL	1,070	1,303

¹ Appendix B, Tables I and N-1

TABLE 2-10

**PROJECTED QUANTITIES OF HAZARDOUS WASTE
FROM CONTAMINATED SITES¹
SANTA BARBARA COUNTY**

<u>SOURCE</u>	<u>Contaminated Soils Total Quantity (Tons)</u>	<u>Annual Quantities² (Tons/Yr)</u>	<u>Quantity Generated in 2000 (tons)</u>
Underground Tanks ³	37,041	3,704	0
Bond Expenditure Plan Sites Cal Trans ⁴	500	50	0
Small Industrial Spills ⁵	100	100	100
Other Cleanup Wastes ⁶	18,150	1,815	
TOTALS	55,291	5,669	100

¹ Appendix B, Table L

² Calculation of annual quantities assumes all identified wastes are cleaned up at a constant rate over a 10 year period, i.e. this is a projection of the amount of contaminated soil generated each year through 1998.

³ Estimate derived from Santa Barbara County Environmental Health Division and Air Pollution Control District Underground Storage Tank Program (assumes 586 leaking tanks X 75 cu. yds./tank X .8428 tons/cu.yd.).

⁴ This site is in the process of being cleaned up. The soils are being treated both onsite and offsite. County EHD staff estimates that approximately 500 tons will be shipped offsite.

⁵ The County Environmental Health Division estimates that approximately 100 tons of contaminated soil are generated annually as a result of small spills. The actual amount in any one year, however, can vary extensively.

⁶ Shell Molino Site - PCB contaminated soils. Tonnage estimates derived from Santa Barbara County Environmental Health Division.

TABLE 2-11

**EFFECT OF WASTE MINIMIZATION ON THE PROJECTION
OF HAZARDOUS WASTE GENERATION¹
SANTA BARBARA COUNTY**

<u>WASTE GROUP</u>	AMOUNT GENERATED IN THE YEAR 2000 (tons/yr)		
	<u>NO WASTE MINIMIZATION</u>	<u>Including Waste Minimization Based On Estimates From: GENERATORS²</u>	<u>DOHS³</u>
Waste Oil	3,101	2,989	2,922
Halogenated Solvents	490	70	448
Non-Halogenated Solvents	1,428	129	1,414
Organic Liquids	1,464	1,173	1,416
Pesticides	281	76	276
PCBs & Dioxins	15	0	14
Oily Sludge	121	81	116
Halogenated Org. Sludge & Solids	53	53	48
Non-Halog. Org. Sludge & Solids	2,216	1,263	2,194
Dye & Paint Sludge & Resins	231	192	226
Metal-Containing Liquids	9,898	198	7,423
Cyanide & Metal Liquids	14	14	11
Non-Metallic Inorganic liquids	2,088	940	1,566
Metal-Containing Sludge	90	90	68
Non-Metallic Inorganic Sludge	2,962	2,962	2,221
Contaminated Soil	100	100	100
Miscellaneous Wastes	<u>6,142</u>	<u>307</u>	<u>6,019</u>
TOTAL	30,693	10,635	26,482

¹ Appendix B, Tables N-1, N-2, and N-3; projections include estimates of industrial waste shipped offsite, cleanup wastes, new wastes, and household hazardous wastes.

² Based on information provided by the large quantity generators in the County through a survey done as part of the HWMP.

³ Based on information in the DOHS' Guidelines for Preparation of the HWMP, Technical Reference Manual, Section H.

TABLE 2-12

POTENTIAL TREATMENT METHODS BY WASTE GROUP¹

<u>WASTE GROUP</u>	<u>Primary Treatment Method</u>	<u>Alternative Treatment Method</u>
Waste Oil	Oil Recovery	Incineration
Halogenated Solvents	Solvent Recovery	Incineration
Non-Halogenated Solvents	Solvent Recovery	Incineration
Organic Liquids	Other Recycling	Aqueous Treatment - Organic
Pesticides	Aqueous Treatment - Organic	Aqueous Treatment - Organic
PCBs & Dioxins	Incineration	None
Oily Sludge	Oil Recovery	Incineration
Halog. Org. Sldgs & Solids	Incineration	Solvent Recovery
Non-Halog. Org. Sldgs & Solids	Incineration	Solvent Recovery
Dye & Paint Sludge & Resins	Incineration	Other Recycling
Metal-Containing Liquids	Aqueous Treatment - Metals Neutralization	Other Recycling
Cyanide & Metal Liquids	Aqueous Treatment - Metals Neutralization	Other Recycling
Non-Metallic Inorganic Lqds.	Aqueous Treatment - Metals Neutralization	None
Metal-Containing Sludge	Stabilization	Other Recycling
Non-Metallic Inorg. Sludge	Aqueous Treatment - Metals Neutralization	None
Contaminated Soil	Other Recycling ¹	Other Recycling
Miscellaneous Wastes	Various	--

¹ From the DOHS' Guidelines (1987) except for contaminated soils. The treatment method for this group was changed to other recycling for both the primary and alternative treatment method to more accurately reflect current practices for managing this type of waste.

TABLE 2-13

**NEEDS ASSESSMENT FOR COMMERCIAL
HAZARDOUS WASTE TREATMENT CAPACITY¹
SANTA BARBARA COUNTY
1986**

-----ESTIMATED NEED² (tons/yr)-----

<u>General Treatment Method</u>	<u>Scenario 1: Primary Treatment</u>	<u>Scenario 2 Maximize Recycling</u>
Aqueous Treatment - Organics	214	0
Aqueous Treatment - Metals	8,344	3,302
Incineration	10,351	9,184
Solvent Recovery	939	2,056
Oil Recovery	1,623	1,623
Other Recycling	4,658	11,559
Stabilization	<u>1,667</u>	<u>72</u>
 TOTAL	 27,796	 31,170
 Residual Repository	 8,673	 5,703

¹ Appendix B, Tables D-1 and D-2

² The scenarios referred to the methods of assigning waste groups to treatment methods.

Scenario 1: The primary treatment method was used for each waste group as given in the Guidelines and shown on Table 2-11 except for contaminated soils which were assigned the alternative treatment method - other recycling.

Scenario 2: Recovery or recycling was used whenever they were identified as potential treatment methods whether as primary or alternative methods.

TABLE 2-14

**PROJECTED NEED FOR TREATMENT AND DISPOSAL CAPACITY FOR
HAZARDOUS WASTE GENERATED IN THE YEAR 2000¹
SANTA BARBARA COUNTY**

<u>General Treatment Method</u>	-----ESTIMATED NEED ² (tons/yr)-----			
	Scenario 1: Primary Treatment With Waste Without <u>Minimization</u> ³ <u>Waste Min.</u>		Scenario 2: Maximize Recycling With Waste Without <u>Min.</u> ³ <u>Waste Min</u>	
Aqueous Treatment - Organics	76	282	0	1
Aqueous Treatment - Metals	1,412	17,201	1,200	7,289
Incineration	1,507	2,514	0	15
Solvent Recovery	198	1,918	1,514	4,186
Oil Recovery	3,070	3,222	3,070	3,222
Other Recycling	1,301	2,137	4,843	15,813
Stabilization	<u>3,070</u>	<u>3,419</u>	<u>8</u>	<u>168</u>
TOTAL	10,635	30,693	10,635	30,693
Residual Repository	5,463	14,437	2,496	8,491

¹ Appendix B, Tables P-1 through P-4

² The scenarios refer to the methods of assigning waste groups to treatment methods.

Scenario 1: The primary treatment method was used for each waste group as given in the Guidelines and shown on Table 2-11 except for contaminated soils which were assigned the alternative treatment method - other recycling.

Scenario 2: Recovery or recycling was used whenever they were identified as potential treatment methods whether as primary or alternative methods.

³ Based on information provided by the large quantity generators in the County through a survey done as part of the HWMP.

TABLE 2-15

**STATEMENT OF PRINCIPLES OF FAIR SHARE ADOPTED BY
THE SOUTHERN CALIFORNIA HAZARDOUS WASTE MANAGEMENT AUTHORITY
ON AUGUST 25, 1988**

1. Every county and city in the region will accept responsibility for the management of hazardous wastes in an amount proportionate to the hazardous wastes generated in the county and city.
2. Each county shall meet its obligation in managing hazardous wastes either by siting facilities to treat and dispose of hazardous wastes or by entering into intergovernmental agreements with other counties to site facilities.
3. The Authority encourages the siting of treatment facilities in counties where there is a substantial unmet need for the type of treatment which a facility would provide. The Authority will consider the relative risk of waste type and treatment methodology in the fair share allocation of facilities.
4. The minimum fair share responsibility for each county shall be to have some combination of facilities sited within the county, and intergovernmental agreements with other counties which will equal the county's offsite hazardous waste generation.
5. The maximum fair share responsibility for each county will be to have facilities sited within the county that equal the off-site waste generation of the county. A county may choose to site facilities in excess of that county's off-site waste generation.
6. The Authority will assist and support local government siting of facilities consistent with the first five fair share principles through the regional action plan. The Authority will support local governments in their local land use decisions which are consistent with the fair share principles.
7. Fair share determination is dynamic and will change based on economic growth, progress in waste minimization, technological advancement, and progress in siting new facilities. The fair share determination for each county shall be made annually by the Authority based on the most recent generation data and projections, and whenever a new facility is sited or an existing one expanded or restricted.
8. Fair Share Formula:
 - a. Regional unmet needs equals regional waste generation less existing regional waste treatment capacity (for each treatment category).
 - b. Fair share allocation of regional unmet need equals regional unmet needs by treatment category, allocated proportionately among counties that generate more off-site wastes than they treat, divided by facility size assumptions.

REFERENCES

CHAPTER 2 - DATA ASSESSMENT

1. California Department of Health Services, 1987. *Guidelines for Preparation of Hazardous Waste Plans and Technical Reference Manual*.
2. California Public-Private Partnership on Safe Hazardous Waste Management, 1988. *Future Hazardous Waste Management Capacity at Key Offsite Facilities in California: Implications for County Capacity*. Prepared by Exceltech, Inc.
3. Casmalia Resources, pers. comm. Letter from Louis Cunningham to Mary Ann Scott, September 26, 1988. Re: Capacity Estimates for Casmalia Resources.
4. Santa Barbara County, 1985. *Casmalia Resources Hazardous Waste Management Facility Environmental Assessment*. Prepared for the County Board of Supervisors by the Resources Management Department.
5. Santa Barbara County, 1988. *Hazardous Waste Data Analysis and Facility Needs Analysis*. Prepared by Jacobs Engineering Group, Inc.
6. Vandenberg Air Force Base, pers. comm. Letter from Colonel Orville Robertson to Mary Ann Scott, November 1, 1988. Re: Contaminated Soils.

CHAPTER 3

SITING PROCEDURES

3.1 INTRODUCTION

The Tanner legislation (AB 2948, 1986) calls for each county to take responsibility for the hazardous waste generated within that county. This involves first, promoting waste minimization measures to reduce the amount of waste generated and disposed, and second, assuring the availability of adequate facilities for the transfer, storage, treatment, recycling, and disposal of wastes generated in the county. Chapter 2 presents an analysis of available data regarding current and projected hazardous waste generation within Santa Barbara County and estimates the need for facilities to manage these wastes. Because limited data is available and other factors may influence future needs, the determination of the need for a hazardous waste facility must be made at the time a facility is proposed. The discussion of siting a hazardous waste facility in this Plan, therefore, has not been limited to any specific type of facility. Rather, a process is defined to evaluate the appropriateness of any hazardous waste facility proposed and criteria developed for evaluating a site for the facility. Defining procedures for all types of facilities is necessary to maintain local jurisdiction in the future. If an appeal is filed against a local decision on a hazardous waste facility project, it will be evaluated by a state appeals board based on consistency with the HWMP. Section 25135.4(a) of the California Health and Safety Code states that "No person shall establish or expand an offsite facility, unless the legislative body of the city or county in which the new offsite facility, or the expansion of an existing facility, is proposed makes a determination that the facility is consistent with the county hazardous waste management plan."

Section 25135.1(d)(6) of the California Health and Safety Code requires the County Hazardous Waste Management Plan (HWMP) to include an identification of general areas or specific sites for new hazardous waste facilities, or instead, to include siting criteria to be used in selecting sites for new hazardous waste facilities and designate general areas where the criteria might be applicable. It would be inappropriate to designate general or specific areas for new hazardous waste facilities without a risk assessment and environmental review of a known project, therefore siting criteria have been developed to evaluate potential sites at the time a project is proposed.

The purpose of this chapter is to briefly describe the different types of hazardous waste facilities, outline the process that would be used to approve such a facility, and present the siting criteria. Further discussion of the development of the siting criteria is included in Appendix C-1, and the designation of general areas where the siting criteria might be applicable in Appendix C-2.

3.2 LAND USE REQUIREMENTS OF SPECIFIED HAZARDOUS WASTE FACILITIES

Specified hazardous waste facilities are defined by the California Health and Safety Code as facilities that accept wastes from more than one generator. Specified hazardous waste facilities may also be referred to as offsite, or commercial hazardous waste facilities. It is

important to distinguish among the different types of specified hazardous waste facilities in order to better understand the uses and merits of each and the potential concerns associated with them. The four basic types of specified hazardous waste facilities identified at this time include: transfer and storage facilities; treatment facilities (eg. solidification, stabilization, incineration); recycling facilities; and residual repositories for treated residues. Any specified hazardous waste facility that does not fall into these four categories must also comply with the procedures and siting criteria of the HWMP.

A general description of the land use requirements and characteristics of each type of facility is included below. Table 3-1 provides a summary of the principal features typical to facilities of each type. (The tables are found at the end of this chapter.) The information presented below is taken from two Department of Health Services (DOHS) publications, *Alternative Technology for Recycling and Treatment of Hazardous Waste* and the *Guidelines for Preparation of Hazardous Waste Management Plans*.

3.2.1 Transfer and Storage Facilities

Transfer and storage facilities serve as collection stations. Hazardous wastes may arrive at transfer and storage stations by various modes including rail, vacuum, flatbed or tank trucks, or even by a private passenger vehicle. The wastes are stored until the quantities become large enough to be economically shipped to a treatment or recycling facility. Small scale facilities of this type can be designed to be used by small quantity generators and households (which comprise the largest number of generator types). Transfer stations typically consist of tanks and warehouse-style buildings which could be designed to be compatible with urban, industrial settings.

As summarized in Table 3-1, the land area needed to accommodate a typical transfer facility ranges from approximately 3 acres for a small facility to 10 acres for a large facility. The actual land area requirement may be substantially smaller depending on the ultimate use of the facility and the expected demand. For example, the County Public Works Department and the Community Environmental Council, Inc., are proposing the development of a permanent transfer station for households and small businesses on less than one acre. (This project is discussed further in Chapter 5- Small Quantity Generators.)

3.2.2 Treatment Facilities

Treatment facilities alter the toxicity, chemical form, or volume of a waste. According to the DOHS publication, *Alternative Technology for Recycling and Treatment of Hazardous Waste*, treatment processes are generally designed to accomplish one of three things: 1) destruction or detoxification to transform a hazardous waste into a material safe for disposal; 2) concentration or volume reduction to facilitate the safe handling and disposal of the hazardous components; or 3) immobilization to isolate the hazardous components from the environment. The two most common forms of immobilization are solidification and stabilization. Because treatment processes for hazardous waste generally produce a hazardous residue requiring disposal, many commercial treatment facilities are associated with disposal sites.

Solidification and Stabilization Facilities

Solidification is a type of treatment process designed to stabilize wastes that cannot be recycled, treated, or destroyed. This process is accomplished by the use of special additives to change a liquid to a solid or alter the characteristics of a solid to immobilize the contaminants. A solidification facility would look like a large industrial building with several tall silos attached (for storage of dry chemicals). These facilities could range in size from 1 to 10 acres and employ from 5 to 30 individuals. The volumes of waste produced could be accommodated, from a low of 5,000 tons per year of material to be solidified, up to as much as 100,000 tons per year. Transportation requirements would vary based on the quantities of waste actually being handled.

Incineration

Incineration is a type of treatment process that burns hazardous waste in order to destroy the material. Incineration usually results in a small amount of hazardous residue. It is used primarily to destroy wastes that are economically infeasible to reclaim or technically difficult to treat. Incinerators can be developed as onsite or offsite facilities. Larger hospitals in the county have permitted onsite incinerators to manage the infectious wastes generated as part of their everyday operations.

As described in Table 3-1, offsite incinerators typically require up to 4 to 10 acres of land and employ from 2 to 12 individuals. A small incinerator might destroy 5,000 tons of waste per year, necessitating only perhaps five truckloads of waste per week. A large incinerator could handle up to 100,000 tons annually and would be served by approximately 92 trucks per week.

Transportable Treatment Units

Transportable treatment units (TTUs) may have a larger role in hazardous waste management in the near future. Although land disposal will no longer be an option for untreated waste streams, it is difficult and often impractical to build large treatment facilities. Past attempts to site large specified treatment facilities have often failed because of strong local opposition. On the other hand, few companies generate a sufficiently large volume of waste to justify installation of a treatment unit onsite. As a result of these difficulties, transportable versions of most treatment technologies are being developed. TTUs reduce the need to transport large volumes of hazardous waste and may play an important role in waste minimization. Although TTUs present a challenge for regulatory agencies because of their mobility, they may offer a viable solution to many land use issues. TTUs generally serve only one generator at a time and therefore would not be a specified hazardous waste facility.

3.2.3 Recycling Facilities

Recycling involves the reclamation, use, or reuse of wastes. Recycling is a preferred waste management alternative, since it not only reduces the volume of hazardous materials which

must be disposed but also conserves materials. Recycling processes can take place onsite or offsite. Onsite recycling includes reuse of the waste at the source of generation; use of the waste in a different process; and processing of waste to produce a marketable product. Offsite recycling involves the shipping of wastes to a commercial recycler who processes the waste and either returns it to the producer or sells it on the open market.

Recycling facilities (particularly for recovery of liquid organics, solvent distillation, and oil refining) have many similarities to a small refinery or petrochemical plant. There are storage tanks, pipelines, or distillation towers similar to a modern products refinery. Like a refinery, there would also be occasional venting of steam from distillation equipment. The typical liquid organics recovery facility could cover between one and ten acres. Employment would range from 15 to 60 individuals. The accompanying truck or rail traffic would be approximately 6 to 28 vehicles for a small facility.

3.2.4 Residuals Repository

Residuals repositories are locations for long-term storage of the byproducts of treated hazardous waste for which there is no further treatment. Residuals repositories are defined in state law (SB 2093, 1988) as a specified hazardous waste facility which accepts only treated hazardous waste, meets all applicable federal and state regulations, and holds a hazardous waste facility permit. Residual repositories will replace existing Class I hazardous waste landfills as state and federal laws prohibiting the land disposal of untreated waste come into effect. The DOHS is required to develop standards for residual repositories by May 1, 1990, which must include the types of wastes acceptable for disposal, standards for design, construction, operation, monitoring, maintenance, closure, and post-closure, standards for location and geology, and requirements for waste segregation and record keeping. As stated earlier in the Plan, the overall goal for effective hazardous waste management is to significantly reduce the amount of treated or modified waste products which require placement in a residuals repository. One way of accomplishing this is through the use of source reduction and recycling.

Residual repositories would not be prominent facilities. Depending on the volume of waste accepted, a small repository could be 50 to 100 acres, whereas a large facility could require as much as 300 acres. These facilities would employ from 15 to 25 persons and could receive from 9 to 54 truck loads of waste product per week.

3.3 PERMITTING PROCEDURES

The land use requirements and characteristics of the different specified hazardous waste facilities vary significantly with the size and type of facility. A common trait shared by all facilities is the handling of hazardous wastes which by definition pose a threat to human health and the environment if not handled properly. A careful process must be established at the local level to guide the siting of facilities and impose conditions for approval to mitigate or minimize potential risks and environmental impacts.

Standard procedures for application, review, and approval of development proposals are identified in County and City General Plan policies and local ordinances. Information particular to specified hazardous waste facilities will be incorporated into the General Plan with adoption and implementation of the HWMP. While all existing procedures and policies would be applicable to this type of development, some additional requirements are mandated by state law, and others will be adopted locally in order to maintain local jurisdiction over land use decisions regarding specified hazardous waste facilities. Section 25135.4(a) of the California Health and Safety Code states that "No person shall establish or expand an offsite facility, unless the legislative body of the city or county in which the new offsite facility, or the expansion of an existing facility, is proposed makes a determination that the facility is consistent with the county hazardous waste management plan."

Development of a specified hazardous waste facility would require permits from local, state, and possibly federal agencies under land use planning, zoning, hazardous waste, air quality, water quality laws, and other development regulations. At the local level, both ministerial and discretionary permits would be required. Ministerial permits are those which require a decision based on fixed standards and objective facts to determine conformity with applicable regulations. A ministerial decision involves little or no personal judgement. Examples of ministerial permits which may be required include building permits, utility clearances, hazardous waste generator permits, and certificates of occupancy. Discretionary permits, on the other hand, require the use of judgement or deliberation when the local agency decides to approve or disapprove a particular project. Discretionary decisions include but are not limited to issuance of a land use or conditional use permit, granting of a variance, and the subdivision of property. Discretionary permits usually require public hearings.

The Tanner legislation (AB 2948, 1986) sets new procedures to be followed for permitting specified hazardous waste facilities. The applicant must file a Notice of Intent with the State Office of Permit Assistance (OPA) and the county or city at least 90 days prior to submitting an application for a land use decision. During the 90 day period, the OPA must hold a public meeting in the affected city or county, and the local agency must appoint a seven member Local Assessment Committee to represent the community in the permitting process. The mandated role of the Local Assessment Committee is addressed in Chapter 11- Public Participation and Education. Procedures for the approval of specified hazardous waste facilities are found in the Health and Safety Code, Section 25199 et. seq.

The siting of a specified hazardous waste facility requires environmental review under California Environmental Quality Act (CEQA). An Environmental Impact Report (EIR) or a Negative Declaration (ND) must be certified stating there are no significant environmental impacts or all impacts can and will be mitigated to insignificance. If impacts cannot be mitigated to insignificance, the lead agency must issue statements of overriding concern in order to approve a project. Because of the land use decision required of the county or city, the county or city may be the lead agency under CEQA. Other agencies which have the authority to issue a permit or some other sort of clearance for the project are considered responsible agencies. Responsible agencies might include the State Department of Health Services, Regional Water Quality Control Board, Air Pollution

Control District, Environmental Health Division, Fire Department, and Public Works Department. The Office of Permit Assistance (OPA) will assist in identifying required permits, convene meetings, determine decision making schedules, assist in consolidating public meetings and hearings, and encourage coordination among responsible agencies.

Public involvement must be initiated early in the process and all permitting agencies should cooperate in order to save time, share resources, and minimize duplicate review. The permitting process should be comprehensive but not so burdensome as to discourage all applications for needed facilities.

A process for appealing a local decision on a hazardous waste facility has recently been set forth in the Health and Safety Code, Section 25199.9. This statute sets the requirements for the formation of an appeal board, the basis for which an appeal can be filed, and the grounds for upholding or denying the appeal. When a local decision is made to approve or disapprove a specified hazardous waste facility, the decision may be appealed by an interested party only under the following circumstances:

- a. The project is disapproved prior to certification of the EIR or adoption of an ND;
- b. Project is disapproved but proponent has obtained all permits from state agencies;
- c. Project is approved with conditions so onerous and restrictive that their imposition is the same as disapproval, and all permits from state agencies are obtained; or
- d. Project is approved, all state permits are obtained, but the conditions imposed do not adequately protect the public health, safety, or welfare.

If the appeal is accepted, reversal of a local decision is allowed only with these finding:

- a. All significant environmental impacts will be adequately mitigated;
- b. Project is consistent with the County or City General Plan (at the time the application was accepted as complete);
- c. Project is consistent with the approved HWMP;
- d. Alternative locations were adequately considered; and
- e. Reversal of the decision is consistent with statewide, regional, and County hazardous waste policies, goals, and objectives, including: need, type, location, technology.

The appeal board will be appointed by the Governor or the Governor's designee and will consist of representatives of state health, air, and water agencies, and county and city officials.

The requirement that a project under appeal must be consistent with the HWMP underscores the importance of the local goals, policies, implementation programs, and siting criteria contained in the HWMP. Without an approved HWMP, the County and cities must rely on existing land use policies and zoning restrictions for protection in the event of an appeal. Existing policies may not account for special health and environmental risks posed by specified hazardous waste facilities. The siting criteria presented in Table 3-3 of this chapter have been developed to address this problem.

3.4 SITING ANALYSIS

The following discussion introduces the siting criteria that will be used to determine whether a particular site is appropriate for a proposed specified hazardous waste facility. As discussed in the introduction to this chapter, the siting criteria were developed as an alternative to designating general and specific areas for new specified hazardous waste facilities. The identification of areas for facilities is not appropriate without detailed information about the site and a known project. In addition to the siting criteria, section 25135.1(d) of the California Health and Safety Code requires the HWMP to identify general areas where the siting criteria might be applicable.

3.4.1 Siting Criteria

The siting criteria are tools for selecting, evaluating, and permitting a proposed project at a particular site. In conjunction with the permitting procedures outlined in implementation program 3-B, the siting criteria provide a uniform framework to assess proposals for development of specified hazardous waste facilities. The Department of Health Services (DOHS) Guidelines provide recommended siting criteria which can be adopted by the County to fulfill the requirements of the state law. The DOHS criteria are based on criteria developed by the Southern California Hazardous Waste Management Authority (SCHWMA). The criteria can be divided into six categories as summarized in Table 3-2.

Santa Barbara County developed siting criteria based on the DOHS criteria. To determine the appropriateness of adopting each criterion, comparisons were made with existing County land use policies. As a result of these comparisons, input from the public and Advisory Committee, and recommendations of the Environmental Impact Report (EIR), minor changes were made. The DOHS Guidelines advise that any change from their recommended criteria be justified. Appendix C-1 discusses the development of the siting criteria and reasons for changes to the DOHS recommended criteria.

In order to judge a proposed facility's consistency with the siting criteria, specific information is required as part of a project's application and review process. This additional information includes studies to assess impacts to human health, air, surface and groundwater quality, and other resources. A risk assessment is necessary to identify potential impacts to public health,

safety, and the environment so that appropriate mitigation can be required. Preliminary studies are required with the application submitted by the project proponent, and additional studies are required as part of the environmental review for a particular project. Reference to the need for these types of studies will be identified in local land use plans and ordinances so that developers are aware of the information required with the application and the scope of the environmental analysis. The minimum information required is presented in implementation program 3-B at the end of this chapter.

The siting criteria apply to new or expanded specified hazardous waste facilities, including but not limited to transfer, storage, treatment, or recycling facilities and residuals repositories. Any other type of specified hazardous waste facility must also comply with the permitting procedures and siting criteria of the HWMP. The siting criteria are found in Table 3-3 at the end of this chapter.

3.4.2 Designation of General Areas Where the Criteria Might be Applicable

The overall intent of mapping general areas is to demonstrate that there are areas in the County where the siting criteria might be applicable. The preparation of maps reflecting all the siting criteria is infeasible due to the need for site-specific information. Thus, maps were prepared based on some of the siting criteria only as a demonstration that the siting criteria do not unreasonably eliminate all land in the County. Site-specific information is needed to evaluate conformity with the siting criteria of any given project. Some of the areas mapped as inappropriate for siting facilities may not exclude all facilities after detailed, project-specific review. Many of the siting criteria allow for appropriate mitigation if approved by the County or City on a project and site-specific basis. At the time a specified hazardous waste facility is proposed, the siting criteria, along with existing County or city policies, not the maps, will be used to evaluate the appropriateness of the project location. This is specified in policy 3-2 of this chapter.

A detailed explanation of the development of the maps, and the maps which identify general areas where the siting criteria for treatment, recycling, storage, or transfer facilities might be applicable (Figure A), and general areas where the siting criteria for residuals repositories might be applicable (Figure B), are provided in Appendix C-2.

3.5 ONSITE AND TRANSPORTABLE HAZARDOUS WASTE FACILITIES

Much of the discussion regarding hazardous waste management focuses on the goal of establishing waste minimization programs. The data analysis in Chapter 2 illustrates the potential impact waste minimization can have on reducing local need for specified hazardous waste facilities. Waste minimization includes onsite measures for treatment and recycling of wastes. An onsite facility would treat, store, or dispose of hazardous waste on land owned or leased by the waste producer and would receive waste only from that producer. Onsite treatment, storage (over 90 days), or disposal of hazardous waste requires a treatment, storage, and disposal facility (TSDF) permit from the Department of Health Services (DOHS) and a County hazardous waste generator permit. Additionally, land use permits may be required for new or modified facilities proposing onsite treatment, storage, or

disposal capabilities. Although onsite hazardous waste facilities are encouraged, approval of these facilities must include conditions for mitigation of potential impacts to human health and the environment.

Transportable treatment units (TTUs) are essentially onsite facilities and would require a TSDF permit from the DOHS. The development of transportable technologies is advancing rapidly and use of these facilities is expected to increase in the near future. The application of local regulations to the use of these facilities is unclear at this time. Implementation program 3-C calls for evaluation of the need for special permit procedures or zoning designations for onsite hazardous waste facilities, including TTUs.

3.6 GOALS AND POLICIES

The availability of needed hazardous waste facilities is important for effective management of hazardous wastes. Defining local procedures for reviewing and approving specified and onsite hazardous waste facility projects is essential to maintaining local jurisdiction of related land use decisions. The siting criteria presented in this chapter, and the goals, policies, and programs below lay the framework for developing these procedures.

Goals

- 3-1 To site needed hazardous waste facilities in areas that ensure the protection of public health and safety and the environment.

Policies

- 3-1 The County and cities shall establish an efficient siting and permitting process that provides for needed hazardous waste facilities in areas which pose the least threat to public health and safety and the environment, and includes extensive public input to aid in selecting sites.
- 3-2 The siting criteria, along with existing land use policies, shall be used by the County, cities, and other permitting jurisdictions in determining the suitability of siting specified hazardous waste facilities on any lands within the County, including the cities.
- 3-3 The County and cities shall encourage the development of onsite facilities for the treatment or recycling of hazardous wastes.
- 3-4 The County and cities shall not approve any specified hazardous waste facility for which a significant fiscal deficit on the local jurisdiction is projected without incorporation of adequate mitigation to reduce the fiscal shortfall to insignificance.

Implementation Programs:

3-A Permit Process Guidelines for Specified Hazardous Waste Facilities

Develop guidelines that identify the requirements of applications for specified hazardous waste facilities, outline the permit process for these facilities, and discuss the environmental review process. Procedures should be developed to ensure proper review of hazardous waste facility projects by the Environmental Health Division prior to land use approval by the County or cities.

3-B Amendments to Zoning Ordinances

Amend County and City zoning ordinances to be consistent with this Plan. Establish hazardous waste facility and residuals repository overlay designations, conditional use permit classifications, and corresponding application requirements, project review requirements, and standards for assessing the suitability of a particular project and site. These requirements shall include, but not be limited to, the items listed below.

1. Application Requirements

- a. In order to ensure that proposed facilities are appropriately sited, applicants for hazardous waste facilities shall submit preliminary information regarding the proposed facility to the County before a formal application is accepted. The information shall be submitted in the form of a pre-application assessment that provides a detailed project description, an evaluation of alternative sites for the project, and a discussion of how the proposed project meets the siting criteria and the policies of this Plan.

2. Project Review Requirements

- a. The siting criteria shall apply to all new or expanded specified hazardous waste facilities. Site specific information shall be used to evaluate the consistency of a proposed project with the siting criteria. Consistency will be determined during the environmental review process.
- b. A risk assessment shall be required. The purpose of the risk assessment is to estimate the level of risk to human health and the environment. Sufficient detail should be provided so that decision-makers will have an adequate basis from which to consider alternatives. The risk assessment shall include, but not be limited to, the following items:
 1. the use of worst case incident scenarios;

2. the identification of the maximum volumes expected of different classes (or types) of hazardous materials or waste;
 3. the identification of physical and chemical characteristics of the wastes that will be handled;
 4. a discussion of the size and compositions of any residential or populated areas nearby and the potential for impacting these areas;
 5. an evaluation of potential impacts to air quality, water resources, crops, vegetation, and wildlife;
 6. an evaluation of the project's effect on immobile populations;
 7. an analysis of emergency response capabilities;
 8. an evaluation of emissions from routine operations;
 9. the evaluation of different transportation options; and
 10. a discussion of the detection and monitoring systems, auditing and inspection programs, and other risk reduction controls with regard to protection of human health and the environment.
- c. An air quality assessment shall be conducted of the project's impact on air quality, including an analysis of whether emissions from the facility would significantly contribute to non-attainment of standards, consideration of mitigation measures, and an analysis of projected emissions of the facility as compared to emissions associated with the transport of materials out of the County. The assessment shall also include analysis of toxic air contaminant emissions and releases.
- d. A water quality assessment shall be conducted of the project's possible adverse impacts on local ground and surface water resources arising from routine discharges, leakage or accidental spillage of waste at the site. These assessments shall include but not be limited to possible impacts to drinking water supplies.
- e. A site characterization and geotechnical investigation shall be conducted to evaluate geologic hazards and other disaster potential. This shall include but not be limited to assessment of soils, faults, slopes, landslide potential, ground and surface waters, and floods.
- f. Architectural and visual analysis shall be required and recommendations incorporated into project design to protect views and

vistas, ridgelines, coastlines, etc. Architectural review criteria shall be applicable to all proposed facilities.

- g. An assessment shall be conducted of the project's expected demand for water, sewer, and energy. This must include a discussion of the availability of these systems, and conservation measures incorporated into project design.
- i. The net fiscal impact of the proposed facility on affected jurisdiction(s) shall be determined. Potential mitigations for significant fiscal impacts can include, but are not limited to, assessment districts, hookup fees, and increases in annual permit and monitoring charges.

3. Development Standards

- a. A buffer adequate to protect the public and sensitive environmental areas will be required based on a thorough assessment of risk to public health and safety.
- b. A risk management and prevention plan (RMPP) shall be required to incorporate proper risk reduction measures into the design and construction of a facility. The RMPP shall be prepared in accordance with the guidelines provided pursuant to the California Health and Safety Code, Chapter 6.95, and must be approved prior to operations.
- c. All hazardous waste facilities shall comply with APCD rules and regulations and be consistent with the Air Quality Attainment Plan.
- d. All hazardous waste facilities must be designed and constructed to be able to contain spills, leaks, and other accidental releases of waste. This containment shall provide protection to surface and ground water resources, protection to air quality where appropriate, and shall be based on the site characterization and geologic report.
- e. Availability of public services (water, sewer, utilities) is required for hazardous waste treatment, recycling, transfer, and storage facilities in urban areas. Onsite, private services are allowed only when these facilities are needed to serve local demand in rural areas, or the size and type of facility is determined inappropriate for urban areas. Onsite, private services shall be designed to accommodate expected demand and to protect environmental resources.

Onsite, private services are allowed for residuals repositories if designed to accommodate expected demand and to protect environmental resources.

- f. Project construction shall include mitigation of construction impacts including but not limited to dust suppression, emissions control, sedimentation control, and restricted construction hours.
- g. The design of any hazardous waste facility shall include measures for adequate site security including enclosing the site with a fence or wall.
- h. Grading and alteration of natural drainages shall be minimized.
- i. Adequate provisions shall be made to prevent erosion and flood damage.
- j. All lights shall be shielded so that all lighting is confined to the project site.
- k. The facility shall be visually compatible with the existing and anticipated surroundings by use of any or all of the following measures where applicable: buffer strips, landscaping to screen the facility and painting to camouflage or blend with the surrounding area.
- l. No noxious odors associated with the facility shall be detectable at the property boundary.
- m. The level of noise generated by the facility at or beyond the property boundary shall not exceed 70db(A).
- n. A monitoring system to measure offsite impacts, including noise, vibration, odor, and air and water quality degradation, shall be required as a condition of approval.

3-C Provisions for Onsite Hazardous Waste Facilities

Evaluate the need to amend the zoning ordinance to allow onsite hazardous waste treatment, recycling, storage, or disposal facilities, including transportable treatment units (TTUs). This includes determining the need for special permit procedures and zoning designations.

TABLE 3-1

PRINCIPAL CHARACTERISTICS OF TYPICAL HAZARDOUS WASTE TREATMENT FACILITIES

Facility Category	Amount Annually (in 1000's of Tons)	Amount Weekly (in 1000's of Gallons)	Minimum Number of Incoming Vehicles Per Week		Land Area (in acres)	Number of Employees	Appearance From Outside Facility
			Trucks (4,000 Gallons Each ¹)	Railcar (8,000 Gallons Each ²)			
Transfer Station							
Small	10-15	23-110	6-23	3-14	1-3	2-5	Warehouse-style building with trucks entering to transfer material; storage tanks near building surrounded by dikes.
Large	30-40	70-300	18-75	9-38	5-10	5-10	
Treatment (e.g. treatment of aqueous waste)							
Small	10-12	46-65	12-14	6-7	3-5	15-20	Raised pools or holding basins with storage tanks near a few buildings; surface aerators operating in open tanks and basins; warehouse-style building with trucks entering to transfer material.
Large	100-200	460-920	120-230	60-120	10-30	35-40	

¹ Assuming that all wastes are transported by trucks² Assuming that all wastes are transported by train

T A B L E 3-1 (cont.)

<u>Facility Category</u>	<u>Amount Annually (in 1000's of Tons)</u>	<u>Amount Weekly (in 1000's of Gallons)</u>	<u>Trucks (4,000 Gallons Each¹)</u>	<u>Railcar (8,000 Gallons Each²)</u>	<u>Land Area (in acres)</u>	<u>Number of Employees</u>	<u>Appearance From Outside Facility</u>
Incineration							
Small	5-10	12-76	3-19	2-10	4-6	2-3	Tall smokestack which emits steam; visible storage tanks for waste; warehouse-style building with trucks entering to transfer material.
Large	60-70	140-530	35-130	13-65	8-10	2-12	
Repository for treated residues							
Small (25 to 50-year life span)	10-20	No Liquids	9-18	5-9	50-100	15-20	Area surrounded by five-foot-high landscaped berm partially covered by Quonset hut-shaped moveable roof.
Large (50 to 60-year life span)	40-60	No Liquids	36-54	18-27	200-300	20-25	

¹ Assuming that all wastes are transported by trucks

² Assuming that all wastes are transported by train

T A B L E 3-1 (cont.)

<u>Facility Category</u>	<u>Amount Annually (in 1000's of Tons)</u>	<u>Amount Weekly (in 1000's of Gallons)</u>	<u>Trucks (4,000 Gallons Each¹)</u>	<u>Railcar (8,000 Gallons Each²)</u>	<u>Land Area (in acres)</u>	<u>Number of Employees</u>	<u>Appearance From Outside Facility</u>
Recycling (e.g. recycling of liquid organics)							
Small	10-15	23-110	6-28	3-14	1-3	15-20	Appearance of small refinery, distillation towers, pipelines, and many storage tanks; two industrial buildings; visible dikes surrounding tank storage area; occasional visible venting of steam from distillation equipment; warehouse-style building with trucks entering to transfer material.
Large	30-40	70-300	18-75	9-38	5-10	45-60	
Solidification or Stabilization							
Small	5-15	16-47	4-12	2-6	1-2	5-10	Industrial building with silos nearby for storage of dry chemicals; warehouse-style building with trucks entering to transfer material.
Large	50-100	160-310	40-78	20-39	5-10	26-30	

¹ Assuming that all wastes are transported by trucks

² Assuming that all wastes are transported by train

TABLE 3-2

SUMMARY OF SITING CRITERIA FOR OFFSITE COMMERCIAL FACILITIES*

PROTECT RESIDENTS OF SANTA BARBARA COUNTY

- Public Safety Distance from Residences
- Distance from Immobile Populations
- Proximity to Large Numbers of People in Public or Private Areas
- Availability of Zoning Restrictions Emergency Services

ENSURE THE STRUCTURAL STABILITY OF THE FACILITY

- Flood Plains
- Seismic
- Unstable Soils

PROTECT SURFACE AND GROUNDWATER QUALITY

- Drinking Water Supplies
- Surface and Groundwater Quality
- Depth to Groundwater
- Major Recharge Areas for Aquifers
- Permeability
- Water Wells

PROTECT AIR QUALITY

- Nonattainment and Prevention of Significant Deterioration Areas

PROTECT SIGNIFICANT RESOURCE AREAS

- Wetlands
- Habitat of Critical or Significant Species
- Prime Agricultural Lands
- Recreation, Cultural, or Aesthetic Areas
- Mineral Resource Lands

ENSURE SAFE TRANSPORTATION OF HAZARDOUS WASTES

- Reduce Travel through Residential Areas
- Reduce Distance from Major Routes
- Proximity to Waste Stream

* The Siting Criteria are provided at the end of this chapter.

TABLE 3-3

**SITING CRITERIA
FOR OFFSITE COMMERCIAL HAZARDOUS WASTE FACILITIES**

I. PROTECT RESIDENTS OF SANTA BARBARA COUNTY

A. Public Safety Distance from Residences

A minimum buffer zone of 2,000 feet from residences shall be required for any hazardous waste residuals repository unless it is demonstrated to the satisfaction of the County or City, and the State Department of Health Services, that a buffer zone of less than 2,000 feet is sufficient to protect the present and future public health and safety, and the environment. A risk assessment shall be required and shall consider the physical and chemical characteristics of the specific type of wastes that will be handled, the design features of the facility, and other factors to determine the size of the buffer needed to protect residences and other sensitive areas from potential accidents or from adverse emissions from a proposed facility.

A risk assessment shall be required for treatment, recycling, storage and transfer facilities and shall consider the physical and chemical characteristics of the specific type of wastes that will be handled, the design features of the facility, and other factors to determine the size of the buffer needed to protect residences and other sensitive areas from potential accidents or from adverse emissions from a proposed facility.

Residences shall include but not be limited to existing residences, land areas zoned for residential use, hotels, motels, and other temporary housing facilities.

B. Distance from Immobile Populations

A minimum buffer zone of 2,000 feet from immobile populations shall be required for any hazardous waste residuals repository unless it is demonstrated to the satisfaction of the County or City, and the State Department of Health Services, that a buffer zone of less than 2,000 feet is sufficient to protect the immobile population. A risk assessment shall be required and shall consider the physical and chemical characteristics of the specific type of wastes that will be handled, the design features of the facility, and other factors to determine the size of the buffer needed to protect immobile populations and other sensitive areas from potential accidents or from adverse emissions from a proposed facility.

TABLE 3-3 (continued)

A risk assessment shall be required for treatment, recycling, storage and transfer facilities and shall consider the physical and chemical characteristics of the specific type of wastes that will be handled, the design features of the facility, and other factors to determine the size of the buffer needed to protect immobile populations and other sensitive areas from potential accidents or from adverse emissions from a proposed facility.

Immobile populations include schools, hospitals, convalescent homes, prisons, facilities for the mentally ill, and other facilities which have limited potential for evacuation.

C. Proximity to Large Numbers of People in Public or Private Areas

Hazardous waste facilities shall be sited so as not to cause significant, adverse impacts to the public health and safety of people in public or private areas. The appropriate buffer shall be determined as a part of the risk assessment.

D. Availability of Emergency Services

Hazardous waste facilities shall be located where served by fire departments trained to deal with hazardous materials accidents and where response times are the same or better than those recommended by the National Fire Protection Association unless it is demonstrated to the satisfaction of the County or City that comparable emergency response capabilities will be available onsite. Additional emergency services, design, and equipment may be required based on the risk assessment and the risk management and emergency response plans.

E. Zoning Restrictions

Residuals repositories are long term uses of large areas of land and shall be located only by conditional use permit in areas found to be suitable for a hazardous waste residuals repositories overlay zoning designation.

Hazardous waste treatment, recycling, transfer, and storage facilities shall be located only by conditional use permit in industrial zoned areas, or by conditional use permit in non-industrial areas found to be suitable for a hazardous waste management facility overlay zoning designation. The overlay designation shall be used only for facilities necessary to serve generators outside industrial areas, or if findings are made that the proposed site is a preferred alternative when evaluated according to the policies and siting criteria of the HWMP and compared to alternative locations within the industrial boundaries.

TABLE 3-3 (continued)

II. ENSURE THE STRUCTURAL STABILITY OF THE FACILITY

A. Flood Plains

Residual repositories shall not be located in areas subject to 100-year flooding. This includes areas subject to flooding by dam or levee failure and natural causes such as river flooding, rainfall or snowmelt, tsunamis, seiches, and coastal flooding.

Hazardous waste treatment, recycling, transfer, and storage facilities shall not be located in areas subject to 100-year flooding unless it is demonstrated to the satisfaction of the County or City that the facility is designed, constructed and maintained to preclude failure in the event of a flood. This includes areas subject to flooding by dam or levee failure and natural causes such as river flooding, rainfall or snowmelt, tsunamis, seiches, and coastal flooding.

B. Seismic

Hazardous waste facilities shall not be located within 200 feet of an active or recently active fault as defined in the California Code of Regulations (CCR), Title 22, Section 66391(a) (11) A (1) and (2)).

C. Unstable Soils

Residuals repositories shall not be located in areas of potential rapid geologic change.

Hazardous waste treatment, recycling, transfer and storage facilities shall not be located in areas which have unstable soils or severe geological constraints unless it is demonstrated to the satisfaction of the County or City that engineering design features will assure structural stability. Such areas shall be determined by a geological report and may include but are not limited to steep slopes and areas subject to liquefaction and subsidence due to natural causes. Areas requiring extensive grading should be avoided.

III. PROTECT SURFACE AND GROUNDWATER QUALITY

A. Drinking Water Supplies

Hazardous waste facilities shall not be located in areas where the maximum credible accident or natural disaster, or non-accidental releases and emissions, would cause significant, adverse impacts to drinking water supplies. The

TABLE 3-3 (continued)

maximum credible event shall be determined by the risk assessment and shall consider at a minimum: proximity to surface waters and recharge areas, depth to groundwater, soil permeability, geology, structural stability, spill containment features, inspection and monitoring measures, emergency response, and other mitigating controls.

Drinking water supplies include but are not limited to reservoirs and potable groundwater aquifers; surface waters and groundwater basins recharging reservoirs and potable groundwater aquifers; and shall include water resources that may reasonably be developed in the future for drinking water supplies.

B. Surface and Groundwater Quality

Hazardous waste facilities shall not be located in areas so as to cause significant, adverse impacts to the quality of surface or groundwater resources, including but not limited to groundwater basins, nearby streams or drainage channels, wetlands, and the ocean.

C. Depth to Groundwater

Residuals repositories and other facilities with subsurface storage or treatment shall not be located where the depth to groundwater, permeability of overlying geological materials, and other natural features do not provide natural protection capable of containing waste and leachate as a backup to primary containment.

Hazardous waste treatment, recycling, storage, and transfer facilities shall not be located in areas where the depth to groundwater, permeability of overlying geological materials, and other natural features do not provide natural protection unless the engineering design and construction of the facility and containment structures are capable of precluding significant, adverse impacts to groundwater.

D. Major Recharge Areas for Aquifers

Residual repositories shall not be located within areas known or suspected to be supplying principal recharge to a regional aquifer as defined in adopted general, regional, or state plans.

Treatment, recycling, storage, and transfer facilities shall not be located within areas known or suspected to be supplying principal recharge to a regional aquifer as defined in adopted general, regional, or state plans unless facilities provide properly engineered spill containment features, inspection and

TABLE 3-3 (continued)

monitoring measures, and other environmental protection controls. Facilities should not be permitted where permeable strata and soils overlie a major recharge area.

E. Permeability

Residuals repositories and other facilities with subsurface storage and treatment shall not be located in areas of high permeability.

Treatment, recycling, storage and transfer facilities shall not be located in areas of high permeability unless facilities provide properly engineered spill containment features, inspection and monitoring measures, and other environmental protection controls.

Areas of high permeability shall be determined by the County or City in conjunction with the Regional Water Quality Control Board after assessment of individual site characteristics identified in the geological report.

F. Water Wells

Hazardous waste facilities shall not be located within the surface or subsurface area surrounding a water well or well-field supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well-field. These areas shall be designated by the County or City after consideration of such factors as well pumping rates, time-of-travel of groundwater flowing to the well, aquifer boundaries, and degree of confinement.

IV. PROTECT AIR QUALITY

A. Nonattainment and Prevention of Significant Deterioration Areas

Hazardous waste facilities shall not be located in Non-Attainment (NA) or Prevention of Significant Deterioration (PSD) areas unless they meet APCD requirements and are consistent with the Air Quality Attainment Plan. Hazardous waste facilities shall not be located within Class I areas as identified in the Clean Air Act or near or within wilderness areas, national parks, memorial areas, and similarly dedicated areas.

TABLE 3-3 (continued)

V. PROTECT ENVIRONMENTALLY SENSITIVE AREAS

A. Wetlands

A minimum buffer zone of 1,000 feet from wetlands such as estuaries, fresh water and brackish marshes, and stream corridors, as defined in adopted general, regional, or state plans, shall be required for all hazardous waste facilities unless it is demonstrated to the satisfaction of the County or City that a smaller buffer zone will not pose significant, adverse impacts to the wetland.

B. Habitat of Critical or Significant Species

A minimum buffer zone of 1,000 feet from critical or significant habitat areas shall be required for all hazardous waste facilities unless it is demonstrated to the satisfaction of the County or City that a smaller buffer zone will not pose significant, adverse impacts to these areas.

Critical or significant habitat areas include but are not limited to habitats of animal and plant species identified or being considered for identification as "endangered" or "threatened" by the U.S. Department of Interior or the State of California, and species or communities which are not endangered on a state or national scale but are identified by the County or cities as locally rare or unique.

C. Prime Agricultural Lands

Hazardous waste facilities shall not be sited on prime agricultural lands, as defined in California law and local land use plans, unless an overriding public need is served and demonstrated.

D. Recreation, Cultural, or Aesthetic Areas

Hazardous waste facilities shall not be located in recreation, cultural, or aesthetic areas except low volume transfer and storage facilities necessary to handle hazardous wastes generated by visitors, workers, or residents within these areas. Such facilities may only be sited in these areas if no feasible alternative location exists.

Protected areas include but are not limited to state, county, and city parks; historical and archeological sites; scenic highways; public and private preservation areas; and areas identified in County and City plans as significant visual resources.

TABLE 3-3 (continued)

E. Mineral Resource Areas

Hazardous waste facilities shall not be sited so as to preclude extraction of minerals necessary to sustain the economy of the state.

VI. ENSURE SAFE TRANSPORTATION OF HAZARDOUS WASTE

A. Reduce Travel Through Residential Areas

All hazardous waste facilities shall be located so that road networks leading to major transportation routes minimize residential exposure, except low volume transfer and storage facilities necessary to handle waste generated in residential areas, and shall be demonstrated to be safe with regard to road design and construction, accident rates, excessive traffic and other factors needed to assure safety.

B. Reduce Distance from Major Routes

All hazardous waste facilities shall have safe access to major transportation routes. Facilities should be located to minimize distances to major transportation routes and shall be serviced by roads designed, upgraded, or constructed to accommodate the volume and weight of traffic proposed.

C. Proximity to Waste Generation Stream

Residuals repositories may be located more distant from waste generation sources because of their long term need for larger land areas and buffer zones.

Hazardous waste treatment, recycling, storage, and transfer facilities should be located close to waste generation sources to minimize the risks of transportation.

REFERENCES

CHAPTER 3 - SITING ANALYSIS

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CHAPTER 4

WASTE MINIMIZATION

4.1 INTRODUCTION

The most effective mechanism for reducing the impacts from hazardous wastes is to minimize the amount of waste that is generated. Waste minimization may be the optimal strategy for protecting the environment, minimizing the cost of environmental compliance to industry, and lowering the regulatory costs of government. Until recently, however, most efforts on environmental protection have focused on controlling wastes once they are produced, the so-called "end-of-the-pipeline" approach. This was the approach for example, specified in RCRA (the Resource, Conservation and Recovery Act) with its requirements for "cradle-to-grave" tracking of hazardous waste. As the costs of pollution control escalate for both industry and government, and as the risks from improperly managed wastes increases, there is mounting pressure to change our focus from pollution control to pollution prevention. Minimizing the amount of hazardous waste generated is the best way to meet the overlapping needs of the public for a safe environment, of industry for lower costs of regulatory compliance, and of government for cost-effective regulatory and enforcement programs.

Waste minimization is also inextricably linked to the issue of siting hazardous waste facilities (Hirshhorn and Oldenburg, 1987). As is shown in Chapter 2 (Section 2.5) of this plan, the impact of waste reduction on the projected need for hazardous waste facilities can be dramatic. Estimates of the amount of hazardous waste generated in the year 2000 are lowered 65% when one estimate of waste reduction is included. Furthermore, if recycling is used instead of treatment and disposal, the need for hazardous waste treatment and disposal facilities is reduced even more.

Implementation of a waste minimization program that includes source reduction, recycling, and onsite treatment will decrease the amount of hazardous waste that is generated and will lower the hazard associated with what is produced. In many cases it will also reduce the cost of waste management to industry. Many generators of hazardous waste, however, lack information about source reduction procedures, options for recycling, or technologies for onsite treatment. This information and technical expertise can be provided through a local waste minimization program. A program that emphasizes source reduction and recycling can lower waste management costs by reducing raw material cost, hauler fees, and waste disposal fees. Source reduction and recycling may also provide savings by reducing future liability associated with disposal of hazardous wastes. An effective waste minimization program must take a comprehensive multimedia approach to ensure that wastes are not simply being moved from one medium to another, but that the overall generation of waste is reduced.

The three components of a waste minimization program - source reduction, recycling, and onsite treatment - are often called the waste minimization hierarchy. This term reflects the priority that should be given, first to source reduction, second to recycling and third to onsite

treatment, whenever a waste minimization program is being implemented. These three aspects of waste minimization are discussed below.

Source Reduction

Source reduction refers to any process that reduces, avoids, or eliminates the amount of waste being generated. Because it is a preventative approach, this is the most effective way of reducing the risks to the public and the environment. It can also be an effective cost-saving approach for generators. Potential source reduction methods include process and equipment changes, product reformulations, chemical substitutions, and improved maintenance and housekeeping practices.

Recycling

Recycling of hazardous wastes can minimize impacts and can provide savings through the decreased use of raw materials and decreases in waste disposal costs. Recycling refers to the reuse of materials and includes onsite recycling, offsite recycling, and waste exchanges. Not all waste streams are suitable for recycling. Limitations stem from a lack of effective technology for recovering materials or lack of a profitable market place for the recycled products. Waste streams which are productively recycled include solvents and oil. Recycling does not completely eliminate the need for disposal of hazardous wastes. In most cases residuals are produced which must be handled and disposed as hazardous wastes. Waste exchanges are a method of recycling in which the wastes of one business are used by another business. Common types of wastes that can be managed in this way include solvents and paints.

Treatment

Treatment should be the last alternative in a waste minimization program and should only be implemented if source reduction or recycling is not feasible. Treatment includes such processes as neutralization and solidification. These processes are used to reduce the volume and toxicity of the hazardous waste. In most cases, a residual remains after treatment and requires disposal. Treatment systems should be installed onsite whenever feasible to minimize the risks associated with transportation of hazardous wastes.

4.2 REGULATORY REQUIREMENTS

4.2.1 Requirements of AB 2948 and the DOHS Guidelines

The State Legislature, in approving AB 2948, found that "a solution to the safe and responsible management of hazardous wastes also requires improved programs of waste source reduction and recycling and encouraging onsite treatment of hazardous wastes." Counties are required to include as part of their Hazardous Waste Management Plans "an analysis of the potential in the county for recycling hazardous waste and for reducing the volume and hazard of hazardous waste at the source of generation." Based on this analysis, a statement of goals, objectives, and policies must be developed.

The Guidelines developed by the State Department of Health Services (DOHS) for implementation of AB 2948 identifies the requirements for waste minimization. These are identified in the following sections. (Section numbers refer to those in the Guidelines.)

Section 3.5.6. Waste reduction is defined to include onsite practices that reduce, avoid or eliminate the need for offsite hazardous waste facilities. [Equivalent to waste minimization as used in this HWMP]. It includes source reduction, recycling, and treatment. The focus of waste reduction programs should be to reduce offsite treatment and disposal needs. Primary consideration should be given to activities which prevent materials from entering the hazardous waste stream.

Section 3.5.6.1. Plans should discuss existing waste reduction and estimates of waste reduction that has occurred or is anticipated. The plan should also contain a projection of waste reduction potential in the County. The DOHS has proposed percentages of source reduction for various waste groups for use in the projections of waste generated through the year 2000. These predicted reductions are to be modified based on County data regarding: 1) the size and nature of the waste generating industries; 2) the type, quantity and concentration of waste; 3) current waste management practices; and 4) the existence of a County waste reduction program.

Section 3.5.6.2. Barriers to waste reduction by generators should be discussed. Types of barriers include: technical, financial, institutional, and physical barriers.

Section 3.5.6.3. The plan should consider the need for and feasibility of establishing a local waste reduction program. Factors to be considered include: 1) number of generators; 2) size of generators; 3) quantity of waste being shipped to land disposal; 4) the cost of establishing and maintaining a program, and; 5) availability of program funding.

4.2.2 Other Requirements for Waste Minimization

A number of federal and state laws explicitly require waste minimization and recycling. Additional legislation provides regulatory incentives for waste minimization by controlling or limiting the disposal of wastes to landfill. These laws are summarized below.

A. Resource Conservation and Recovery Act (RCRA), 1984 Amendments

The Hazardous and Solid Waste Management Act of 1984 amended RCRA to include a specific congressional mandate for waste minimization. For all wastes shipped offsite, the operator is required to sign a certificate that states that the generator "has a program in place to reduce the volume or toxicity of such waste to the degree determined by the generator to be economically practical, and that the proposed method of treatment, storage or disposal is that practicable method currently available to the generator which minimizes the present and future threat to human health and the environment" (RCRA, Section 3002(b)). Generators are also required to submit biennial reports to

EPA which must include a description of their efforts to reduce the volume and toxicity of wastes generated.

B. Hazardous Waste Control Act, 1979

The DOHS is required to establish the California Waste Exchange (CWE) program and to encourage waste exchange and recycling. DOHS must prepare and update a list of hazardous wastes that are economically and technologically feasible to recycle. Generators are required to submit a justification to DOHS for disposing of any hazardous waste that DOHS considers recyclable.

C. Used Oil Recycling Act, 1978

The California Waste Management Board (CWMB) is the designated agency for administering this law. It requires that used oil be collected and recycled to the maximum extent possible; that the CWMB encourage and promote used oil recycling; and, that illegal disposal of petroleum-based wastes be prevented.

D. Hazardous Waste Reduction, Recycling, and Treatment Research Demonstration Act, 1985.

The intent of this legislation is to promote the research, development and implementation of technologies that promote the reduction, recycling and treatment of hazardous wastes. It specifies that the generation of hazardous wastes are to be reduced or eliminated as expeditiously as possible and that wastes should be recycled, treated, or disposed in a manner that minimizes any present or future threats to human health or the environment.

E. Hazardous Waste Management Act, 1986

This law restricts the disposal of liquid hazardous wastes in land disposal facilities as of 1988. It also restricts disposal of untreated hazardous wastes in land disposal facilities as of 1990 unless the waste is a cleanup waste or meets the treatment standards developed by DOHS.

4.2.3 Proposed Legislation

Several bills that are currently pending in the state legislature directly address the issue of waste minimization and would, if enacted, result in a reduction in the generation of hazardous waste. The most significant of these is SB 714 (Roberti, 1987). This bill would create a Hazardous Waste Reduction Act which would require generators to review their potential for hazardous waste reduction and to develop a plan to reduce the generation of hazardous waste. Generators would also be required to certify that the plan will be implemented.

Additional proposed legislation dealing with waste minimization includes AB 496 (1987). This bill defines the term "source reduction" and would require the DOHS to give priority to source reduction when carrying out the hazardous waste control laws.

The existing and proposed legislation requires many changes by waste generators. A more active role by local governments is needed in instituting waste minimization programs to provide the mechanism for implementing these changes. To be effective, these programs must look at the types of wastes being generated, evaluate the types of waste minimization methods available, and consider any barriers to the implementation of a waste minimization program.

4.3 BARRIERS TO WASTE MINIMIZATION

A number of studies have identified barriers that preclude industry from adopting waste minimization programs. Although there may be strong incentives to reduce the amount of waste being generated, the ability of industry to implement minimization programs depends on their ability to overcome a number of barriers. The importance of these barriers in prohibiting extensive waste minimization must be considered in the development of a feasible program. Types of barriers that have been identified include technical, financial, institutional, and physical.

Technical Barriers

Technical barriers may prevent adoption of available waste reduction technologies. Firms may be reluctant to initiate modifications to production processes due to concern of risking the quality of their product. For some industrial processes, waste reduction technologies have not yet been developed. Other limitations may arise from a lack of technical expertise within the company, incompatibilities with existing or new operations, and limited awareness of the availability and application of waste reduction procedures.

Financial Barriers

Economic considerations are often the strongest incentive for companies to implement a waste reduction program; similarly economics may well be the strongest barrier. Although waste reduction measures may lead to long-term cost savings, the immediate capital costs for plant modifications may be a significant obstacle. This may be prohibitive for small companies. The increasing costs of land disposal, however, make the costs of waste reduction systems more competitive. This is particularly true if the potential cost of future long-term liability is taken into account.

Institutional Barriers

Two types of institutional barriers have been identified: those arising from regulatory agencies and those existing within the structure of companies. Implementation of waste minimization technologies such as onsite treatment may require a facility to obtain a treatment, storage, and disposal facility permit from DOHS. Source reduction technologies may require modifications to water or air discharge permits. The time and cost associated

with this process may, in some cases, make the implementation of waste minimization technologies prohibitive. The second type of institutional barrier can arise from a lack of awareness or commitment at the decision-making level of the company. Corporate managers may be reluctant to spend capital funds on what they perceive to be unnecessary expansions or equipment.

Physical Barriers

Problems such as lack of space can impede waste reduction efforts and adversely affect the implementation of source reduction or on-site recycling or treatment. Most often physical barriers impact smaller companies with limited production space and lack of available capital to expand operations.

4.4 EXISTING PROGRAMS

4.4.1 State

The Department of Health Services (DOHS) has an ongoing program for the reduction of hazardous waste. This program consists of four elements: regulatory, technical assistance, information and technology transfer, and economic incentives.

The impetus to reducing land disposal of hazardous waste comes from regulatory restrictions. Regulations also provide the basis for implementing the technical assistance and information transfer components of the program. The key components of the regulatory element of the DOHS waste reduction program have been established by state law. They include: land disposal restrictions, reporting requirements, tax incentives for incineration and treatment, and regulation of underground injection.

The technical assistance component is designed to address the specialized needs of specific companies or industries. Major activities include: wastestream-specific studies, operation of the California Waste Exchange, waste reduction audits, direct staff assistance, joint studies with industry associations, and maintenance of a technical reference library.

The DOHS considers the information and technologies transfer to be the most important element of the waste reduction program. If industry is not aware of the regulatory requirements, waste reduction opportunities, and economic incentives, they will not actively seek alternatives to land disposal. This component consists of seminars, fact sheets, biennial reports, newsletters, and a waste exchange catalog.

Economic incentives, both positive and negative, comprise the fourth component of DOHS' program. The objective of developing positive incentives is to assist generators in overcoming specific financial barriers to waste reduction. Whereas negative incentives increase the cost of disposal, and make landfilling less attractive to industry. The economic incentives program includes a study of economic incentives, the Hazardous Waste Reduction Grant Program, fees, and taxes.

4.4.2 Santa Barbara County

The County does not have a formal waste minimization program. Environmental Health Division inspectors try to provide information on waste reduction during their routine inspection of generators. However, this service has been limited by the number of inspections each staff member must make and the lack of a waste reduction specialist on staff. The Board of Supervisors has recently allocated funding for a waste reduction specialist and a health educator. These additional staff should provide the basis for an active waste minimization program in the County.

4.5 WASTE MINIMIZATION PROGRAM

Hazardous waste minimization programs have been implemented on a local level in a number of counties in California. Both Ventura and San Diego Counties have implemented successful waste minimization programs through their Environmental Health Divisions. Like the state program, these involve a number of components that address different aspects of the problem. In addition, the California Partnership for Safe Hazardous Waste Management (1987) and the Environmental Defense Fund (1986) have developed model programs that identify a variety of approaches to waste minimization. All of these existing and model programs emphasize the need to have a cooperative interaction between local governments and industry for effective waste minimization. The various aspects of these programs stress the same priorities for effective waste minimization: source reduction, recycling and onsite treatment. Each component of a waste minimization program should emphasize this hierarchy.

4.5.1 Public and Private Commitment

The development and implementation of an effective waste minimization program requires the commitment of local government, industry, and the public. The participation of all of these groups is necessary to ensure that a program is developed that meets the needs of the community and to ensure that such a program is implemented in a timely and efficient manner.

Adoption of official policy helps to focus attention on the need for change and to provide the guidance for the development of programs to implement the goals. The Board of Supervisors adopted a resolution in July, 1987, that identifies the waste reduction policy of the County (Appendix A-3). The resolution states that it is the policy of the County to: 1) reduce wastes at the source; 2) recover and recycle wastes; and, 3) treat wastes that cannot be reduced, recovered, or recycled. The City of Santa Barbara has adopted a similar resolution.

The participation of industry is critical to the success of a waste minimization program. Such a program must be developed to address the waste streams and types of industries found locally. Industry input is needed during both the development and implementation of a waste minimization program. Chambers of Commerce and trade associations can take a leadership role in establishing the commitment of industry to waste minimization. Trade associations can provide specific technical assistance to their members and can help disburse

applicable information to the appropriate companies. Surveys done through Chambers of Commerce or trade associations could provide the specific information needed to most efficiently focus the County's efforts in implementing a waste minimization program.

Public support is also essential for a successful waste minimization program. The public needs to be aware of the necessity for such a program. The adoption of official policy helps to make the public aware of this critical issue. Educational programs and workshops should involve the public as well as industry and local government. Information on proper management of household hazardous wastes will help make the public more aware of the complexities of this problem. (Household hazardous wastes are discussed in detail in Chapter 6.)

4.5.2 Program Components

Education

Education should be the cornerstone of a waste minimization program. Key activities should include providing industry with adequate information on regulatory requirements, available waste minimization techniques, and economic incentives. Lack of such information is the most frequently cited barrier to waste minimization, particularly by small quantity generators. Developing an active information dissemination program would be an effective means for the County to promote source reduction, recycling, and onsite treatment.

A number of steps should be included in the educational component of a waste minimization program. These include establishing a technical reference library; disseminating information on waste minimization procedures and technologies; coordinating a waste exchange program; and providing a guide for regulatory and permit requirements. To increase the cost effectiveness of this component, the program should be designed to make maximum use of existing information. This information should be collected, modified based on the needs of local generators, and distributed as appropriate. Such a program could be developed and implemented by one staff person who is generally familiar with waste minimization. In addition, funding would be necessary so that adequate materials would be collected and disseminated. The Board of Supervisors has recently provided funding for a health educator to work on a waste minimization program for the County.

Technical Assistance

The focus of this component is to provide hazardous waste generators with technical assistance on source reduction, recycling, and onsite treatment. The most effective means of implementing such a program is to provide site-specific information. Onsite consultation can provide generators with direct technical assistance in implementing a waste minimization program. This approach is the backbone of the highly successful Ventura County program (Ventura County, 1987). The waste minimization consultation is provided during routine inspections by the Ventura Environmental Health Services staff.

Three tasks have been identified for an effective technical assistance program in Santa Barbara. The first step requires the addition of a waste reduction specialist to the staff of

Environmental Health Division (EHD). Funding for such a specialist has been approved by the Board of Supervisors. This person should have adequate expertise to be able to assist generators in waste minimization. This person's primary responsibility should be to assist identified generators with site-specific information on waste minimization. In addition, this specialist should provide training and assistance to other EHD staff.

The second task of the technical assistance program is to provide waste minimization consultation during the routine inspection program similar to the program in Ventura County. To implement this type of program in Santa Barbara County, additional personnel would be needed for the hazardous waste generator inspection program because of the additional time that would be spent on each inspection.

A third task in providing technical assistance is to establish a "work-study" program in conjunction with the University of California to have engineering students provide waste minimization consultation. This type of program has been effectively implemented by the University of Minnesota. Recent legislation (AB 1961, Farr, 1987) requested the University of California to evaluate the feasibility of implementing a program to provide hazardous waste audits to businesses through a student intern program. Such a program could be developed in conjunction with the Santa Barbara campus.

Regulation

As identified in the introduction to this chapter, a number of existing regulations require waste minimization. In addition, numerous laws regulate the handling, storage, transportation, and disposal of hazardous wastes. A prerequisite to the effectiveness of these regulations as tools in implementing waste minimization is adequate enforcement.

To be implemented effectively, however, these regulations must be enforced in conjunction with an educational and technical assistance program so that generators are aware of the regulatory requirements and the options available to them for waste minimization. Expansion of the staff of the County generator inspection program would ensure effective enforcement of existing regulations and provide needed assistance in implementing waste minimization procedures.

Existing reporting requirements should be used as part of the County's waste minimization program. The 1984 amendments to RCRA require all generators who ship wastes offsite to certify, on the shipping manifest, that the generator has implemented economically practicable waste reduction methods. However at the present time there is no active enforcement of this provision. Verification that the generator has implemented waste reduction should be part of the County's generator inspection program. Although there is no penalty resulting from lack of compliance, a regulatory incentive could be established to promote compliance. An example of such an incentive would be to give firms that have an effective waste minimization program assistance in local or state permit processing or to give them additional informational or technical assistance. This could be carried out through the other components of the waste minimization program.

The preceding discussion of the regulatory aspects of a waste minimization program was directed at existing facilities. A strong County policy requiring waste minimization should extend to new facilities also. At present, the Environmental Health Division (EHD) requires any new project to identify, prior to occupancy, the measures for reduction of the hazardous waste from the proposed operation. This approach could be strengthened by requiring all proposed projects to submit a waste minimization plan that emphasizes source reduction, recycling, and onsite treatment as part of their initial permit application. This early requirement has two advantages. The first is that it increases the likelihood that waste minimization will be incorporated as part of the project design. The second is that it ensures that the impacts associated with hazardous wastes generated by the project will be evaluated as part of the environmental review.

Recognition

Public recognition of industries that have successfully implemented waste minimization programs can serve as a positive incentive for other companies and can reinforce the County's commitment to working with industry on this problem. It provides positive publicity for the company involved as well as valuable case study information that can be used by other firms.

Options for recognition of industry achievement include such possibilities as letters of commendation to firms that have achieved notable success in reducing wastes; certificates to all firms that voluntarily develop waste minimization programs; or, awards for firms that have made an exceptional accomplishment in waste minimization. Additional recognition could be given to companies that cooperatively work together to implement waste minimization (e.g. a trade association disbursing information to its members).

4.5.3 Scope and Targets

All generators in Santa Barbara County should be included in the scope of the waste minimization program. However, within this group, priorities must be set for initial distribution of information and technical assistance. Identification of initial priorities will help to target the most critical waste stream, generator, or combination of both. Factors affecting which waste stream to target include: size of the waste stream; number of generators; landfill restrictions; regulatory status; toxicity; and applicability of waste minimization techniques. Factors affecting which generators to target include: types and amount of waste being generated; number of generators; size of generators; and location of generators. The priorities of the waste minimization program should be established in the early stages of program implementation.

4.6 GOALS AND POLICIES

The primary mechanism for reducing the impacts of hazardous waste is to reduce the amount of waste being generated. This can most effectively be done through the implementation of a waste minimization program that requires, in order of priority, source reduction, recycling, and onsite treatment. This waste minimization hierarchy should be implemented by all generators of hazardous waste.

Goals

- 4-1 To have all hazardous waste generators implement waste minimization procedures to the maximum extent feasible.
- 4-2 To have all the cities in the County adopt a policy encouraging source reduction, recycling, and onsite treatment.

Policies

- 4-1 The County and the cities shall encourage and promote practices and technologies that will, in order of priority: 1) reduce the use of hazardous substances and the generation of hazardous wastes at their source; 2) recover and recycle the remaining hazardous wastes for reuse; and 3) treat those wastes not amenable to source reduction or recycling so that the environment and community health are not harmed by their ultimate release or disposal.
- 4-2 The County in conjunction with the cities shall develop a hazardous waste minimization program to provide adequate information and technical assistance to all hazardous waste generators to ensure that all generators have knowledge of regulatory requirements and effective waste minimization procedures.
- 4-3 All new or modified land use permits for facilities that generate hazardous waste shall incorporate waste minimization techniques to the maximum extent economically and technically feasible. New applicants shall be required to submit this information as part of their permit application. This policy shall apply to both discretionary and ministerial land use permits.
- 4-4 The County and the cities shall implement hazardous waste minimization techniques in all County and city activities that generate hazardous waste to the maximum extent technically and economically feasible, and shall cooperate with and encourage other agencies in implementing hazardous waste minimization techniques.

Implementation Programs

4-A Waste Minimization Program

A waste minimization program is central for effective hazardous waste management in the County. The five components of such a program include educational materials, technical assistance, economic incentives, regulatory measures, and recognition of achievements. The scope and target of the waste minimization program should be identified prior to implementation and should be reviewed periodically to ensure effective implementation. Whenever possible, the various aspects of this program should address the needs of small quantity generators and should be integrated with the small quantity generator information program recommended as implementation program 5-B.

Educational materials and technical assistance should be the first priority of the waste minimization program. Such information and assistance provide the necessary structure for assisting generators with implementing waste minimization techniques. Providing educational materials and technical assistance has been the key to successful programs in other counties. Economic incentives, recognition measures, and certain regulatory measures should also be included to encourage participation, but these components are a lower priority. The County Environmental Health Division will be the lead agency implementing the waste minimization program. Other local agencies may become involved with some components of the program such as education and recognition. The proposed program is outlined below.

1. Educational Materials

- a. Develop and maintain a local waste minimization library by compiling existing information on waste minimization procedures, technologies for recycling and waste-exchange programs, and regulatory requirements.
- b. Collect and disseminate existing information that explains waste minimization, recycling and waste-exchange programs, and regulatory requirements.
- c. Distribute DOHS self-audit guidelines to appropriate local generators.
- d. Encourage trade associations and local Chambers of Commerce to form an industry task force to promote information exchange and technology transfer.
- e. Form a government-industry-public task force to evaluate the scope and target of the waste minimization program and to identify the best means to promote waste minimization techniques.
- f. Prepare and distribute fact sheets, brochures, or handbooks on waste minimization procedures and technologies applicable to local generators.
- g. Develop a guide for hazardous waste regulatory requirements and permit application requirements.
- h. Co-sponsor workshops or conferences with other organizations such as the Chamber of Commerce, the University, the Local Government Commission, or DOHS.

2. Technical Assistance

- a. Train local inspection staff in waste minimization techniques so that information can be given during routine inspections as time allows (requires no additional staff).

- b. Support a waste minimization specialist to provide onsite technical consultation.
 - c. Expand existing staff so that waste reduction consultation is actively incorporated into the existing inspection program (requires additional staff).
 - d. Seek grants or other funding for a waste-reduction technical assistance demonstration project (e.g., program to create a revolving-loan fund for small generator waste minimization activities and provide low-cost waste-reduction, consultation to targeted generators).
 - e. Establish a "work-study" program in conjunction with the University to have engineering students provide waste minimization consultation to generators.
3. Economic Incentives
- (To be identified.)
4. Regulatory Measures
- a. Integrate waste minimization requirements into permits for development or as standard permit conditions.
 - b. Require local generators to submit to the County Environmental Health Division the waste minimization plans that are required under RCRA.
 - c. Require approval of a waste minimization plan as a prerequisite to any financial incentive.
 - d. Require a waste minimization plan for any local government operation that generates hazardous waste.
 - e. Require approval of a waste minimization plan as a condition for renewal of a permit or business license.
 - f. Increase enforcement of all existing waste management and waste minimization requirements.
5. Recognition
- a. Letters of commendation from the Board of Supervisors or City Councils to firms that have achieved notable success in reducing hazardous wastes.

- b. Certificates to firms that voluntarily develop effective waste minimization programs.

4-B Permit Requirements for Waste Minimization

1. Amend the Zoning Ordinance to require all generators of hazardous wastes to 1) obtain a generator permit from the Environmental Health Division, and 2) incorporate waste minimization techniques to the maximum extent economically and technically feasible. Permit applications should be modified to require a waste minimization plan as part of the application requirements. This will apply to both discretionary and ministerial although the level of information requested will differ. Discretionary projects may be required to submit a more detailed waste minimization plan as a condition of project approval.
2. Develop guidelines and procedures for: 1) reviewing waste minimization plans required as part of permit applications, and 2) guidelines for approving these plans. This will include developing a checklist to identify small generators that are permitted ministerially.

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CHAPTER 5

SMALL QUANTITY GENERATORS

5.1 INTRODUCTION

Small quantity generators (SQGs) are business establishments that produce less than 1,000 kilograms (2,200 lbs) of hazardous waste per month. Most of the small quantity generators are involved in service industries such as dry cleaning, vehicle maintenance, photographic processing, and painting. The remainder are involved in manufacturing industries. Although there are a large number of small quantity generators, studies at national and local levels indicate that small quantity generators are only responsible for a small percentage of the total quantity of hazardous waste produced. For instance, a national survey of small quantity generators prepared for the Environmental Protection Agency in 1985 found that small quantity generators account for 98 percent of hazardous waste generators, yet they contribute only about 0.4 percent to total hazardous waste production (Abt Associates, 1985).

Despite their small contribution to the total quantity of hazardous waste produced, there is a growing concern regarding the impact of the small quantity generators on human health and the environment. This concern stems from the recognition that, due to services that they provide, small quantity generators tend to be located in closer proximity to residential neighborhoods than large quantity generators; the waste characteristics of small quantity generators can have a high hazard potential; and many of these generators are involved in illegal disposal practices such as disposal to sewers and municipal landfills.

There is also a growing awareness that the hazardous waste management needs of small quantity generators are different from those of large generators. Although the basic problems faced by SQGs are similar to those of large generators (increasing costs of disposal and complex regulations), the solutions to these problems may be different for small businesses with few staff and little expertise in hazardous waste management issues. Solutions must be developed in a manner that will be of use to the small generator.

Note that this chapter includes only generators that produce less than 1,000 kilograms of hazardous waste per month and does not include households. Household hazardous wastes are addressed in Chapter 6.

5.2 REGULATORY REQUIREMENTS

Until 1984, small quantity generators were not regulated under the Resource Conservation and Recovery Act (RCRA). In 1984, Congress signed into law amendments to RCRA which brought generators of between 100 and 1,000 kilograms (220 and 2,200 lbs) of hazardous waste per month under the regulatory purview of the federal government. These amendments signified a growing concern with the amount of hazardous waste that is being disposed in a manner which can be injurious to human health and the environment.

Although business establishments generating less than 100 kilograms per month of hazardous waste are not regulated under RCRA, they are regulated under California state law. California law requires that: a) all hazardous waste be disposed at a permitted hazardous waste facility; b) hazardous waste shipments be transported by a registered hazardous waste hauler and accompanied by a manifest which is filed with the State; c) a permit is obtained for storing hazardous wastes onsite for longer than 90 days; and d) operators of waste management facilities carry liability insurance. Section 25185 of the Health and Safety Code authorizes the State Department of Health Services or an authorized local official to perform inspections to ensure compliance with State law. In 1985, the Santa Barbara County Board of Supervisors adopted Ordinance 3503 which gave the County Division of Environmental Health the authority to inspect, monitor, and permit all generators of hazardous waste in Santa Barbara County.

A required component of the County Hazardous Waste Management Plan is "a consideration of the need to manage the small volume of hazardous waste produced by businesses and households" (AB 2948). The Guidelines developed by DOHS identify the information necessary to assess the needs of small quantity generators. These are identified in the following sections: (Section numbers refer to those in the Guidelines.)

Section 3.5.1.3. Small quantity generators are defined as businesses that generate less than 1,000 kg (about one ton) per month. Data on the amount and types of waste generated by SQGs is required. Methods for estimating and analyzing the waste stream are given.

Section 3.5.2.2 Projections of the amount of waste generated by SQGs are required. The projections are based on the data on current generation and the industrial growth projection for the County.

Section 3.5.14 Local programs for the management of wastes from SQGs should be described. An assessment of the adequacy of these programs and the need for additional programs should be discussed.

Section 3.6.8 Existing or proposed programs that address the needs of SQGs should be described. In particular, the need for informational programs, technical programs, and changes in local policies should be assessed.

5.3 SQG HAZARDOUS WASTE GENERATION

There are approximately 1,000 small quantity generators in Santa Barbara County. These generators are distributed throughout the County, roughly in proportion to community size. Over half the generators are found in the Santa Maria and Santa Barbara areas, with fewer in the Goleta, Lompoc, and Carpinteria area. The remainder are located in Guadalupe, Solvang, and the rural areas of the County. This is similar to the pattern found nation-wide; most small quantity generators are found in close proximity to the population centers.

Few data are available on the types and amounts of hazardous waste generated by small quantity generators in Santa Barbara County. The data that are available come from the

Generator Permit Program administered by the County Environmental Health Division. All generators of hazardous waste are required to have a Generator Permit from the County. As part of the permit application, the generators are asked to complete a survey stating the types and amounts of waste generation. To date, however, not all generators have supplied such information. To get an estimation of the types and amount of hazardous waste generated by the small quantity generators in the County, the "no-survey" method identified in the Guidelines for the Preparation of Hazardous Waste Management Plans was used (DOHS, 1987). This method is based on the use of average types and volumes of hazardous wastes produced by various industrial groups. These estimates were modified to incorporate County data, whenever this information was available in the County generator permit applications. Because much of the information is based on average values, these data should only be taken as general estimates. Small quantity generators produced approximately 1,670 tons of hazardous waste in 1986 (Table 5-1). This represents 5% of the total amount of hazardous waste generated by industries in the County in 1986. The small quantity generators include a wide variety of businesses including many types of service industries, manufacturing industries, educational services and general government. Most of the waste (61%) was generated by automotive dealers, repair shops, and service stations. Machinery and electrical industries and business services account for an additional 20% of the hazardous waste generated by small quantity generators. The remaining generators each produced very small quantities, comprising a total of 19% of the generation from small quantity generators.

The hazardous waste produced by the County's small quantity generators falls into 10 waste groups (Table 5-2). Over half (52%) of the waste is classified as miscellaneous waste. This includes such waste types as empty pesticide containers, photographic wastes and used lead-acid batteries. Nearly all types of small quantity generators produce some wastes in this category although in most cases the amount produced is relatively small. The next two largest types of waste produced by small quantity generators are halogenated solvents and organic liquids. Combined with the miscellaneous waste, these three categories contain 91% of the hazardous waste produced by small quantity generators. Relatively small amounts of the remaining types of wastes are generated.

5.4 THE PROBLEMS

There is a growing recognition of the potential damage to human health and the environment from the current waste management practices of small quantity generators. Many of the surveys and studies on small quantity generators have found that a large number of these generators are disposing of their wastes in a manner which is not only illegal but also potentially hazardous to human health. The improper methods for waste disposal include dumping into sewers, storm drains or on the ground, sending hazardous waste to municipal landfills, and long-term storage of hazardous waste onsite. As noted in the previous section, the majority of small quantity generators are involved in service industries and are therefore located in close proximity to urban areas and even residential neighborhoods. Land use patterns often result in a situation where small quantity generators are located much closer to residential areas than large quantity generators. This locational factor increases the threat to people from the improper disposal practices of small quantity generators.

TABLE 5-1

**SMALL QUANTITY GENERATORS
INDUSTRIAL CLASSIFICATION AND AMOUNT GENERATED
SANTA BARBARA COUNTY (1986)**

<u>Standard Industrial Classification</u>		<u>Amount Generated* (tons/yr)</u>
01	Agricultural Production - Crops	34
15	General Building Contractors	2
24	Lumber and Wood Products	21
27	Printing and Publishing	52
28	Chemicals and Allied Products	32
35	Machinery, Except Electrical	125
36	Electrical and Electronic Equipment	103
38	Instruments and Related Products	35
49	Electric, Gas, and Sanitary Services	11
55	Automotive Dealers and Service Stations	305
72	Personal Services	37
73	Business Services	115
75	Auto Repair, Services, and Garages	711
80	Health Services	48
82	Educational Services	3
91	General Government	<u>36</u>
TOTAL		1,670

* Estimated using the "no-survey" method outlined in the DOHS Guidelines for Preparation of Hazardous Waste Management Plans, Technical Reference Manual, and data from the Generator Permit Program administered by the County Environmental Health Division.

TABLE 5-2

SMALL QUANTITY GENERATORS

TYPES AND AMOUNTS OF HAZARDOUS WASTE GENERATED

SANTA BARBARA COUNTY (1986)

<u>Waste Group</u>	<u>Amount Generated* (tons/yr)</u>
Halogenated Solvents	210
Organic Liquids	430
Pesticides	30
Hal. Org. Sludge and Solids	40
Dye and Paint Sludge and Resins	19
Metal-Containing Liquids	40
Cyanide and Metal Liquids	10
Metal-Containing Sludge	10
Non-Metallic Inorganic Sludge	10
Miscellaneous Wastes	<u>870</u>
 TOTAL	 1,670

* Estimated using the "no-survey" method outlined in the DOHS Guidelines for Preparation of Hazardous Waste Management Plans, Technical Reference Manual.

There are many reasons why small quantity generators engage in disposal practices which are not in compliance with regulatory requirements. A lack of information and understanding is a primary reason. Many small quantity generators are not aware that they generate hazardous wastes and therefore are not cognizant of the applicability of existing regulations to their operations. Small quantity generators may not be aware of methods to reduce, recycle, or treat their wastes or may not have the capital funds to install the required equipment to accomplish these goals. Some find the numerous regulations and permit requirements so overwhelming that they chose to ignore them. Whereas larger businesses can afford to have specially trained employees or to hire consultants to deal with their hazardous waste management and permitting, few SQGs have personnel trained in the technical aspects of hazardous waste management, the necessary record keeping, or the many regulations which apply to hazardous wastes.

Cost of disposal is another major factor. Prior to the preparation of the HWMP, the County of Santa Barbara Resource Management Department held a series of public workshops. The purpose of the workshops was to disseminate information and to gain an understanding of the key concerns of the public and business community regarding the issue of hazardous waste management. There were a number of small quantity generators who attended the workshops. Many of them expressly stated that in addition to lack of information and understanding of governmental regulations, cost is a major obstacle to regulatory compliance.

For many types of wastes, the costs of proper disposal are greater than the purchase price of the product. Disposal costs are often structured such that economies of scale exist. That is, larger amounts of waste are given a per-unit discount on disposal costs. Small quantity generators are not able to take advantage of economies of scale, which means they often pay more per pound of waste than large quantity generators. In addition, while it may be technologically feasible to treat or recycle the waste onsite, the cost is often prohibitive to the small quantity generator. A recent study prepared by the University of California at Davis has estimated that in addition to the up-front capital investment in equipment, costs of onsite treatment or recycling could include an initial outlay of as much as \$60,000 for an EPA permit, annual permit costs of \$10,000, and liability insurance costs on the order of \$400,000 per year (U.C. Davis, 1987). Due to the extremely competitive environment in which small businesses exist, they cannot afford the costs of compliance as they presently exist.

A third reason for small quantity generator non-compliance can be attributed to a lack of stringent enforcement of existing regulations. It is difficult for regulatory agencies to track the waste disposal practices of small quantity generators due to the large numbers of small generators relative to the limited regulatory staff. In addition, many studies contend that the costs of non-compliance are not structured to serve as a deterrent. For small quantity generators, the costs of compliance may be greater than the present costs of non-compliance. There is a perception among many small quantity generators that their wastes can be disposed illegally without much risk in being detected. Therefore, from an economic perspective, it is effective to dispose illegally rather than pay the costs of legal disposal. This perception promotes continued illegal handling practices.

5.5 NEEDS OF SMALL QUANTITY GENERATORS

Based on the types of problems that are inhibiting legal handling and disposal of hazardous wastes by small quantity generators, needs can be grouped into three categories: information, cost, and enforcement. Some of these needs can be addressed through local programs, while other actions can only be accomplished at the federal and state levels of government.

Small quantity generators have a need for information regarding both regulatory requirements and hazardous waste management options. The structure of any educational and assistance program should be tailored to the needs of the small quantity generators within a community. The State is currently developing a program entitled "Industry Education for SQGs" that is designed to assist generators in complying with regulatory requirements. The program is to be completed in 1988. This program may not satisfy all small quantity generator informational needs, therefore it must be reviewed for effectiveness within Santa Barbara County. The State also operates an assistance phone line (916-324-1781) to help generators comply with hazardous waste regulations. The University of California, Santa Barbara, offers extension courses on hazardous waste management. These courses cover such topics as a step-by-step guide to compliance and waste management options for the small business. In Santa Barbara County, the Environmental Health Division's Generator Permit Program provides an opportune vehicle for reaching large numbers of small quantity generators. Currently, this program is structured to provide information on and ensure compliance with hazardous waste regulations. The program includes both large and small quantity generators. As a result, it is a difficult task for the Environmental Health Division to reach all hazardous waste generators, given current staff levels and fiscal constraints.

Hazardous waste generators often need assistance in identifying the hazardous portions of their waste streams. This may require a waste audit or may be accomplished through educational materials regarding hazardous waste products. A second important aspect in providing technical assistance is to help small quantity generators evaluate waste management options. The first priority is to assess the feasibility of reducing their waste at the source. (Chapter 4 provides an in-depth discussion of waste minimization.) Another option is to look at both onsite and off-site recycling to minimize the waste stream. Finally, a small quantity generator may need assistance in identifying waste transporters or firms that offer route service pick-up to generators within their industry. Again, the needs of the small quantity generators within a community must be incorporated into any educational or assistance program.

Where the costs of management or disposal options are prohibitive for small quantity generators, they need financial assistance or incentives to achieve compliance with required management and disposal practices. Financial assistance may take the form of loans or grants to assist generators in investing in needed onsite recycling or treatment equipment. Where there are transporters or collection services in an area, it may be necessary to subsidize these operations to lower the price to the generator.

The costs of disposal for individual SQGs can be reduced if the wastes from many generators are consolidated. Two alternatives can meet this need of SQGs: transfer stations and collection services. The County has started the process of siting a transfer station on the South Coast by funding a study by the Community Environmental Council, Inc. (CEC). This study proposes a model program that would provide for the safe management of hazardous wastes from small quantity generators (Santa Barbara County, 1987). The report evaluates the complex issues surrounding such a project. A transfer station would serve as a collection point for hazardous wastes. Wastes brought to the site would be consolidated, temporarily stored, and then sent to recycling, treatment, or disposal facilities. Such a facility could reduce the cost of disposal for SQGs by consolidating small amounts of wastes into more economical, larger loads.

Collection services also consolidate wastes from many small generators into large loads with possible cost savings. In this case, the wastes are picked up at the generator by a waste hauler, a process often referred to as "milk runs." Alameda County has proposed a pilot collection program for SQGs. Their proposed program involves contacting small businesses and putting them in touch with a contracted waste hauler. A schedule is then developed for the collection (or "milk run") of wastes from these businesses. The initial program will be small (20-60 SQGs) and will be evaluated periodically for future expansion (ABAG, 1986).

In addition to the financial assistance needed by small quantity generators, local governments need to seek out available funding options to support development and implementation of needed waste management programs. Sources for Santa Barbara County include seeking funds from the State's Hazardous Waste Control Account which is supported by hazardous waste treatment, disposal, and permitting fees. Other sources are state or local revenue bonds, and taxes collected from the Casmalia Resources Facility (see also Appendix D). CEC has identified a number of potential funding sources for a household and small business transfer station (Santa Barbara County, 1987). These sources include fees from users of the facility, revenues from the sales of recyclable wastes, a refuse bill surcharge, an increase in the solid waste tipping fees, subsidies, and grants. Any evaluation of funding sources should take into account the expenditure limits of Proposition 4 (the Gann limit). Potential funding sources are identified in Appendix D.

The third category of need for effective management of small quantity generator waste is improved enforcement. This includes increasing enforcement efforts and enacting strict penalties for non-compliance. Until hazardous waste generators perceive enforcement to be a threat, they will lack the incentive to adopt waste management measures which are consistent with regulatory requirements. The responsibility for enforcement is best placed with local governments. Such was the feeling of the County Board of Supervisors when they began the permit generator program. This program is an excellent vehicle for reaching small quantity generators in order to disseminate information and technical assistance, ensure compliance, and acquire data. To the extent that staff efforts and funding for this program can be expanded, the program will be more effective in solving the problems facing small quantity generators.

5.6 GOALS AND POLICIES

The following goals and policies are intended to provide a framework for addressing the needs and problems of small quantity generators with respect to hazardous waste management. The special needs of small quantity generators stem from a lack of information and the lack of economically viable alternatives for the collection, treatment, and disposal of hazardous wastes. Policies and programs for waste minimization also address the needs of small quantity generators (see Chapter 4).

Goals

- 5-1 To have safe and economical collection, treatment, and disposal of hazardous wastes generated by small quantity generators.

Policies

- 5-1 All hazardous waste management programs and policies of the County and cities shall consider the special needs of small quantity generators and shall incorporate measures to address these needs. In particular, the waste minimization program required by Policy 4-2 shall include information on the implementation of waste minimization by small quantity generators.
- 5-2 The County and cities should encourage the establishment of transfer stations and collection services as needed to provide a safer and more economical means for small quantity generators to dispose of their waste. Such transfer stations and collection services should be integrated with the waste minimization program required by Policy 4-2 whenever possible.

Implementation Programs

5-A SQG Data Assessment

To most efficiently address the needs of SQGs, more detailed information is needed on the number, type, and size of these generators in the County. Existing programs, such as the Hazardous Waste Generator Permit Program (administered by the Environmental Health Division) should be used to gather such information. The type of information that should be collected includes location of generators, waste types and quantities generated, and current waste management practices and needs. The information should be standardized to be compatible with a comprehensive County data management system. Standardization should include the use of Standard Industrial Codes for each generator and use of the waste groups identified in the HWMP. This information can be used to assess the effectiveness of hazardous waste management programs for SQG. This program should be integrated with the comprehensive data management system proposed as implementation program 2-A.

5-B SQG Information Program

Based on the information collected in Program 5-A, educational materials on hazardous waste management can be more specifically geared to the needs of SQGs in the County. This program should be integrated with the educational component of the Waste Minimization Program but may need to be expanded to address other aspects of hazardous waste management. These aspects may include information on storage, handling and shipping; underground tank regulations; waste haulers; treatment and disposal facilities; and financial assistance.

5-C Transfer Stations and Collection Services

The need and feasibility of a transfer station on the south coast should continue to be addressed as identified in the "Report on a Household and Small Business Hazardous Waste Transfer Station" prepared for the County of Santa Barbara by the Community Environmental Council, Inc. (CEC). The County shall continue to work with CEC and other interested organizations to locate a site for a permanent collection and transfer facility for hazardous wastes generated by SQG's and households. In addition, the County shall identify sources of funding for such a facility, such as revenues from Casmalia Resources and assistance from affected Sanitation Districts, and oversee the operation of the facility on an experimental basis as long as funding is available. The need for collection services and additional transfer stations in other areas of the County should also be evaluated.

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CHAPTER 5 - SMALL QUANTITY GENERATORS

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CHAPTER 6

HOUSEHOLD HAZARDOUS WASTE

6.1 INTRODUCTION

Household hazardous wastes are generally taken to be any household wastes which could harm people or the environment. This includes any product that is ignitable, corrosive, reactive, or toxic. Many products do not cause harm unless they are improperly used or disposed. Nearly every household produces wastes that can be considered hazardous. These wastes are generated from such common activities as cleaning, gardening, and automobile maintenance. Typical examples of such products are shown on Table 6-1 and include oven cleaners, pesticides, antifreeze, and motor oil.

The use and proper disposal of hazardous products in the home has become an important issue because of the potential for impacts from the cumulative effect of improper disposal to municipal landfills, the sewer system, or illegal dump sites, and the potential impact to emergency services personnel. Improper use and storage of such products can be dangerous to household members and disposal of these products into the trash can result in injuries to refuse haulers and disposal site personnel. When disposed in landfills, hazardous wastes from households can leak into the groundwater, contribute to air pollution, or disrupt the decomposition of the refuse. When improperly dumped down the drain or into the gutter, these wastes can damage sewer treatment plants and result in the release of untreated or contaminated sewage into rivers and the ocean.

There are very few data regarding household hazardous wastes. Documented cases of injuries to hauling and disposal site personnel, a few waste characterization projects, and public surveys have clearly demonstrated the generation of hazardous wastes from households. The results of household hazardous waste collection days also shows that there are substantial quantities of hazardous products being produced and needing disposal. There is also indirect evidence of household hazardous wastes from groundwater contamination at municipal landfills. Most dramatically, there are numerous municipal landfills on the National Priorities (Superfund) List of sites with contamination requiring corrective action. The contribution of household contaminants relative to industrial contaminants is not clear in these cases, but the need to minimize the improper disposal of such wastes is. Many hazardous wastes persist in the environment for long periods of time so that by the time the contaminant is detected, it may be too late to stop the impact. Programs designed to reduce the amount of household hazardous waste generated and to properly manage what is generated are needed throughout the County.

This need has been recognized in Santa Barbara County and steps have been taken to solve the problem. The Community Environmental Council, Inc. (CEC) has conducted successful household hazardous waste collection days throughout the County since 1984. Through the education that accompanies these programs, many residents in the County are already aware of procedures for safe disposal and alternatives to using hazardous products. This chapter discusses the generation of household hazardous wastes and reviews programs for household hazardous waste management.

TABLE 6-1
EXAMPLES OF HOUSEHOLD HAZARDOUS WASTES¹

I. HOUSEHOLD CLEANERS

- Drain Openers
- Oven Cleaners
- Wood and Metal Cleaners and Polishes
- Toilet Bowl Cleaners
- General Purpose Cleaners
- Disinfectants

II. AUTOMOTIVE PRODUCTS

- Oil and Fuel Additives
- Grease and Rust Solvents
- Carburetor and Fuel Injection Cleaners
- Air Conditioning Refrigerants
- Starter Fluids
- Lubricating Fluids
- Radiator Fluids and Additives
- Waxes, Polishes, and Cleaners
- Grease and Rust Solvents
- Body Putty
- Transmission Additives

III. HOME MAINTENANCE PRODUCTS

- Paint Thinners
- Paint Strippers and Removers
- Adhesives
- Paints
- Stains, Varnishes, and Sealants

IV. LAWN AND GARDEN PRODUCTS

- Herbicides
- Pesticides
- Fungicides and Wood Preservatives

V. MISCELLANEOUS

- Batteries
- Fingernail Polish Removers
- Pool Chemicals
- Photo Processing Chemicals
- Electronic Items

¹ Office of Solid Waste and Emergency Response - U.S. EPA, A Survey of Household Hazardous Wastes and Related Collection Programs; October 1986.

Note: Not all examples of any generic type shown above are hazardous products e.g. some oven cleaners will not fail the corrosive test. The hazard associated with a specific product depends on its specific chemical constituents.

6.2 LEGISLATION AFFECTING HOUSEHOLD HAZARDOUS WASTE

Existing federal regulations exempt household hazardous wastes from regulations applicable to larger generators of hazardous waste. National concern regarding the potential impacts from household waste is growing, however, as indicated in the 1984 amendments to RCRA (Hazardous and Solid Waste Amendments). These amendments recognize that households may generate hazardous wastes that will be disposed at municipal landfills and that there is the potential for environmental impacts from such practices.

Currently, there are no County regulations that directly address the management of household hazardous wastes.

State Legislation

Household hazardous wastes are regulated under California state law. The Hazardous Waste Control Act regulates all hazardous waste, regardless of quantity or origin. These regulations cover the storage, treatment, transportation, and disposal of all hazardous waste. Implementation of these regulations does not, for practical reasons, extend to regulating household hazardous wastes while they are in the home. Legally, however, household hazardous substances should not be disposed in a municipal landfill.

Activities associated with household collection days are also regulated by State law. The operation of a household hazardous waste collection program requires a permit or variance from the State Department of Health Services (DOHS). Transportation of household hazardous wastes to collection sites is also regulated. A limit of five gallons of liquid or 50 pounds of solid wastes is set on the amount that can be transported at a given time and the transporter must be the generator of the wastes (Health and Safety Code, Section 25163).

Two state laws which directly address household hazardous waste have recently been enacted. AB 1809 (Tanner, 1986) requires the State Waste Management Board to establish guidelines and policies to guide local governments in providing services for the management of household hazardous substances. It was the intent of the legislature that the public be educated about products which contain hazardous substances and practical procedures for their disposal be provided. Cities and counties are authorized to increase their solid waste collection fees in order to cover the costs for the establishment, publicity, and maintenance of a household hazardous waste management program.

The second bill, AB 1744, added Section 25366.5 to the Health and Safety Code. This legislation exempts public agencies and persons acting under contract with a public agency who are operating a household hazardous waste collection program from long-term liability per the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The exemption applies only to those wastes which have been properly handled and transported to an authorized disposal facility in connection with the collection program. The bill also exempts public agencies from paying "California Superfund" taxes on wastes collected as part of a voluntary hazardous waste collection program.

The County is required to consider "the need to manage the small volumes of hazardous waste produced by businesses and households" as part of the Hazardous Waste Management Plan (AB 2948). The Guidelines prepared by the State DOHS for implementation of AB 2948 include recommendations for the household hazardous waste section of the HWMP. These recommendations are summarized below. (Section numbers refer to the Guidelines.)

Section 3.5.1.4. This section requires an analysis of household hazardous waste generation and suggests methods for estimating the volume of wastes produced.

Section 3.5.2.2. An estimation of the amount of hazardous waste generated by households is required through the year 2000. Projections should be based on the amount of waste currently being generated and projected population changes.

Section 3.5.15. Plans should include a discussion of the current management practices and recommendations for future programs. Suggestions for programs include educational and informational materials, collection services, and technical assistance.

Section 3.6.9. Possible implementation programs should be discussed. These could include both educational and technical programs that minimize the disposal of hazardous waste into municipal landfills.

6.3 HOUSEHOLD HAZARDOUS WASTE GENERATION

Although it is widely recognized that a variety of hazardous wastes are generated by households, there are few data on the types and amounts of waste. Most of the information that is available comes from either collection days, surveys of households, or waste stream analyses of municipal landfills. Each of these data sources, however, has limitations making it difficult to extrapolate information. In particular, it is difficult to estimate the rate at which hazardous waste is generated since these materials are often stored for long periods and are often incorrectly identified as hazardous and improperly disposed. Because of these limitations, the estimates presented here should be viewed only as a general indication of the magnitude of hazardous wastes generated by households in the County.

The estimates presented here are based on the City of Albuquerque (1983) study. The average amount of hazardous waste generated per household is derived from estimates of hazardous wastes that are sent to municipal and hazardous waste disposal facilities as well as wastes which are frequently improperly disposed (e.g. emptied-down drains or dumped-in backyards or driveways). This estimate is believed to more accurately reflect the total amount of hazardous waste generated by households than estimates based only on the results of collection days. The estimate from the Albuquerque study was determined from information on the amount of hazardous products used in households whereas information from collection days provides information on what collection day attendees recognize as hazardous materials. Data based only on what is brought to collection days may under-estimate the generation of hazardous wastes if certain products have not been recognized as hazardous. In addition, it is difficult to transform the data gathered on

collection days into rates of hazardous waste generation because the length of time materials have been stored is usually not known.

Data on the generation of household hazardous waste in Santa Barbara County are presented in Table 6-2. The average amount per household derived in the City of Albuquerque study was multiplied by the number of households in Santa Barbara County to estimate the total amount of household hazardous waste generated in 1987 and 2000. Based on this procedure, it is estimated that 1,070 tons of household hazardous wastes were generated in 1987 and that 1,303 will be generated in the year 2000.

Most household hazardous wastes fall into one of five waste groups: halogenated solvents; waste oil; organic liquids; dye, paint sludge and resin wastes; and pesticides. Two of the largest groups, waste oil and dye, paint sludge, and resin wastes, comprise 76 percent (12.8 lbs/yr) of the average amount generated by households (16.6 lbs/yr). This is important to note because these types of wastes can be recycled, thereby significantly reducing the amount of household hazardous waste that must be treated or otherwise disposed. Subtracting these recyclable wastes from the total household hazardous waste generated in the County results in an estimate of 249 tons generated in 1987 and 303 tons generated in the year 2000. Additional reductions in the amount of household hazardous waste that must be treated or disposed could occur as a result of public education programs that identified alternatives to the use of hazardous household products.

6.4 EXISTING PROGRAMS

Santa Barbara County has conducted Hazardous Waste Collection Days since 1984. This program provides a means for proper disposal of small quantities of household hazardous wastes. (In 1985 the program was expanded to accept wastes from small businesses.) These programs have been designed, organized, and implemented by the Community Environmental Council, Inc. (CEC) under contract to the County Department of Public Works.

Public education about household hazardous waste has contributed to the success of the collection days. The collection days are preceded by a public awareness and publicity program. Extensive media coverage is used to promote the event. Information is provided through press conferences, newspaper articles, editorials, and television and radio public service announcements. CEC has also prepared a brochure on household hazardous wastes. This brochure identifies household hazardous wastes, recommends proper disposal methods, provides information on what to do in case of a spill, and suggests alternative products to hazardous commodities. Additional publicity has sometimes been provided through direct mailings to households and educational presentations to schools and community groups. Information regarding the collection days and the proper management of household hazardous wastes can be obtained by calling CEC (805-963-0583).

The program has received strong support from the public as well as from state, county, and city agencies. Many agencies have provided volunteer labor for the events and have assisted with the coordination, publicity, and funding of the program. A hazardous waste management firm is hired to package and dispose of all the waste collected at the event.

TABLE 6-2

**CURRENT AND PROJECTED HOUSEHOLD HAZARDOUS WASTE GENERATION
IN SANTA BARBARA COUNTY¹**

<u>Waste Group</u>	<u>Examples</u>	<u>Average Amount per household² (lbs/yr)</u>	<u>Amount Generated (tons/yr)</u>	
			<u>1987</u>	<u>2000</u>
Halogenated Solvents	Household cleaners, solvents and thinners	0.4	23	28
Waste Oil	Motor Oil	11.0	708	862
Organic Liquids	Antifreeze	3.2	205	250
Dye, Paint Sludge, and Resin Wastes	Paints	1.8	113	138
Pesticides	Pesticides and Yard Maintenance	<u>0.3</u>	<u>21</u>	<u>25</u>
TOTAL		16.6	1,070	1,303

¹ Source of Data:

A Characterization of Hazardous Household Wastes in Marin County, California. Rathje, W. L., Wilson, D. C., and Hughes, W. W. Association of Bay Area Governments, Oakland, CA March 1987.

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² These averages are taken from the City of Albuquerque study and include estimates of hazardous wastes that are sent to municipal and hazardous waste disposal facilities as well as estimates of wastes emptied down drains or disposed on the premises (e.g., dumped in backyards or driveways).

An oil recycler is also present to collect and recycle the waste oil brought to the collection day.

According to a report prepared by CEC, Inc., (Santa Barbara County, 1987) public participation has increased since the first collection day was held in December of 1984 (Table 6-3). Since the initial collection day, more than 17,962 gallons (75.5 tons) of hazardous wastes have been recycled, treated, or disposed through this program. The continued increase in the amount of household hazardous wastes received at the collection days indicates a need to expand programs for the collection of household hazardous wastes and a need for further education to promote alternatives to hazardous products.

Although the collection days have proven extremely successful whenever they have been held in the County, there are some limitations to this type of program. Most of the problems stem from funding constraints, limited community participation, and wastes which cannot be accepted at collection days. Household hazardous waste collection days are expensive. The collection days in Santa Barbara County cost approximately \$50-60,000 for 100 drums of material. Approximately 60 to 70 percent of the costs are attributed to the packaging, transportation, and disposal of wastes. As the availability of Class I landfill space diminishes and as more waste is restricted from municipal landfill disposal, the costs of household collection programs will inevitably increase as the costs of disposal increase. Another limitation to the collection days is that only a relatively small proportion of the community participates on any given day. Generally, only a few percent of the households in a community make use of the collection days. The lack of alternative methods for the proper disposal of household hazardous wastes between collection days is a continuing problem.

CEC has identified limitations to the collection days based on the constraints of state regulations governing the transportation and disposal of hazardous wastes and the limited funding available. These include limits on the amount of waste (no more than five gallons of liquid or 50 pounds of solid waste per trip, and no more than three trips per participant), and limits on the types of wastes (no dioxins, radioactive wastes, or biologically active wastes; and limited acceptance of PCBs and explosives).

In addition to the collection days, households can dispose of their pesticides wastes at the County Agricultural Commissioner storage facility. The capacity of this facility is 2.4 tons/year and, in 1986, the average monthly storage was 0.14 tons. This facility only accepts pesticide wastes from households, not commercial generators (e.g. farmers).

Alternatives to household hazardous waste collection days include establishing permanent drop-off locations that will accept household hazardous wastes on a regular basis, or providing pickup of unwanted household hazardous wastes. CEC has recently prepared a report for the County on the feasibility of siting a permanent hazardous waste collection facility in the County (Santa Barbara County, 1987). They have proposed a model program that would serve both households and small quantity generators. The Board of Supervisors recently allocated additional funding to continue the siting process for this proposed facility. Establishing a permanent collection facility would allow for a continued increase in the number of households that could use such a facility. Additional public education programs concerning household hazardous wastes are also necessary. Information about commonly

TABLE 6-3

SUMMARY OF HAZARDOUS WASTE COLLECTION DAYS¹

<u>Date</u>	<u>Total Number of Participants</u>	<u>Number of Businesses</u>	<u>Number of of Drums²</u>	<u>Gallons of Oil</u>	<u>Gallons of Paint</u>
Dec. '84 (SB)	60	none	23	-	-
Dec. '85 (SB)	65	-	28	-	-
Mar. '86 (SM)	150	16	66	9	-
May '86 (SB)	375	-	108	500	-
Dec. '86 (SB)	380	51	166	600	-
May '87 (SB)	396	46	188 ³	550	-
June '87 (LOM)	237	9	78	500	-
Oct. '87 (SM)	334	23	105 ⁴	680	1,175
Nov. '87 (SB)	512	72	87	600	1,620
May '88 (SB)	505	60	160	700	1,250
June '88 (LOM)	360	25	58	1,070	495

1 Information from the Community Environmental Council, Inc.

2 One drum holds approximately 20 gallons of hazardous waste

3 Beginning in May 1987, new methods for consolidating certain pesticides and water-based paint were incorporated. The total drum figure cannot be directly compared to previous collection days.

4 Beginning in October 1987, a new method for reusing paint was incorporated. The total drum figure cannot be directly compared to previous collection day totals.

Key: SB = Santa Barbara
SM = Santa Maria
LOM = Lompoc

used hazardous materials and the risks associated with hazardous wastes must be available to the public. Review of existing programs throughout the state indicates that the number of participants and amount of wastes increase as people become aware of hazardous wastes in their households. Public education is also important as a way of encouraging the use of alternative products, whenever possible. Use of alternative products will help to decrease the amount of household hazardous wastes that is generated.

At least two California counties have expanded their household hazardous waste programs from occasional collection days. San Bernardino has established a series of permanent household hazardous waste collection sites. To keep the costs down for their facilities, San Bernardino located their drop-off facilities at locations where trained staff are available to accept the materials. These locations include fire stations and the Agricultural Commissioner's office. These permanent drop-off locations are effective although they do not accept wastes from small businesses.

The County of San Diego has a household hazardous waste management system which incorporates both the permanent drop-off locations and curbside pickup. Their program is very expensive (\$500,000/year) but provides the following services: pickup of household hazardous wastes, a series of household hazardous waste collection days at county landfills, and paint recycling days. The paint recycling program has been effective in decreasing the amount of wastes that must be landfilled. Paints often represent 50 percent by volume of the wastes brought to collection days. Recycling these wastes can help to hold down the cost of disposing household hazardous wastes.

6.5 CONCLUSIONS

The continued success of the household hazardous waste collection programs held in the County demonstrates an increasing need for an expanded household hazardous waste management system in Santa Barbara County. Given the expense and technical expertise necessary for sponsoring collection programs, household hazardous waste collection programs cannot be implemented without continued financial and technical assistance.

A number of funding sources should be pursued for continued funding and expansion of household hazardous waste management programs. Assembly Bill 1809 (Tanner, 1986) authorizes cities and counties to increase their solid waste fees to generate funding for the establishment, publicity, and maintenance of a household hazardous waste management system. Previous collection day events have been funded through a coordinated effort between the County, participating cities, and the sanitation districts in each participating community. Measure A monies (Casmalia Resources Tax Revenues) have been used in the most recent collection-day events but these funds may not be available in future years. In the CEC study on the feasibility of a permanent collection facility (Santa Barbara County, 1987), a number of additional funding options were evaluated. These included: revenues from the sale of recyclable hazardous wastes (e.g., oil and solvents); a refuse bill surcharge; and grants from the State Department of Health Services.

Public education should continue to be an integral part of any household hazardous waste management system. Public education on alternative products can result in a reduction of quantities of hazardous waste generated. Educational programs should encourage the public

to buy non-hazardous products when there is a choice. But if hazardous materials and products must be purchased, people should be encouraged to buy only what they need, use up what they have, and give unneeded products to someone who can use them.

The County has already begun to explore alternatives to the collection day program. A study, "Report on a Household and Small Business Hazardous Waste Transfer Station," conducted by CEC, Inc. for the County Department of Public Works, was recently completed. This study evaluated the feasibility of siting a transfer station on the South Coast. Further analysis is still necessary but it is possible that such a facility will be available in the near future.

6.6 GOALS AND POLICIES

Implementation of the following goal and policies will facilitate the reduction and safe disposal of household hazardous wastes.

Goal

- 6-1 To promote waste minimization, recycling, and safe management of household hazardous waste.

Policies

- 6-1 The County and the cities should continue programs for the proper collection and disposition of household hazardous wastes. Programs should include collection days, permanent collection and transfer facilities, and curbside pickup, as appropriate and feasible.
- 6-2 The County and cities should expand the public education program on the safe use and minimization of household hazardous products.
- 6-3 The County and cities should evaluate and implement additional programs in order to maximize recycling of household hazardous waste.

Implementation Programs

6-A Collection Programs

Continue the program for the collection and disposal of household hazardous waste. The program should include an evaluation of the on-going need for collection day events, the potential for permanent drop-off locations at landfills or other locations where wastes could be delivered on a regular basis, the feasibility of curbside pickup of waste oil and paint, and an assessment of funding sources as identified in the report prepared by CEC (Santa Barbara County, 1987). Procedures for recycling household hazardous waste should be implemented whenever possible.

The County should develop a program to encourage local industry to accept for treatment or disposal small quantities of household hazardous wastes generated by their employees.

6-B Education Program

The County, cities, and sanitation districts should work together to continue and expand the educational component of the collection day events. The focus of this effort is to ensure continued education on substitute household products and the hazards associated with improper storage, use, and disposal of hazardous household products. If feasible, educational information should be distributed to all households (e.g. via utility bills). The County and cities should support labeling legislation to require manufacturers of household hazardous substances to indicate proper methods of disposal on product labels.

6-C Recycling

Expand the program for recycling household hazardous wastes. The recycling component of the collection days should be expanded to include paint and any other waste that can feasibly be recycled. Incentives to encourage service stations to take waste oil from households should also be developed. The potential for additional programs (e.g. curbside pickup) for waste oil and paint should be evaluated and implemented if feasible.

6-D Waste Composition Study

A study should be conducted at selected County landfills to assess the types and amounts of hazardous wastes in the residential waste stream being disposed at municipal landfills.

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CHAPTER 7

TRANSPORTATION

7.1 INTRODUCTION

Hazardous substances and hazardous wastes are transported through the County on a daily basis. Accidental spills or releases of hazardous materials caused by vehicle accidents or defective containment can present serious public safety hazards along roadways. Although emergency responders receive training to handle such incidents, it is important to consider how the County can have a more active role in ensuring safe transportation of hazardous wastes. The purpose of this discussion is to evaluate the transportation of hazardous wastes in the County and identify areas for improvement. Reference is made throughout this chapter to hazardous materials as well as hazardous wastes. As discussed in Chapter 1, the Hazardous Waste Management Plan is concerned primarily with hazardous waste issues and not with hazardous materials issues. However, for some issue areas such as transportation, there is no clear delineation between wastes and materials.

Hazardous wastes in both solid and liquid form are transported by truck out of the County to treatment and recycling facilities, and into the county from other areas for disposal at Casmalia Resources. In 1986, Santa Barbara County generated 30,536 tons of hazardous waste, of which about 77 percent was transported to locations outside the County. This trend has largely been due to the amount of wastes from oil and gas industry which comprise 46 percent of the wastes shipped out of the County. Hazardous wastes brought into the County significantly contribute to the amount of transportation. Hazardous wastes imported into the County and disposed of at Casmalia Resources comprised about 131,440 tons in 1986.

7.2 TRANSPORTATION REGULATIONS

State and federal legislation requires the proper identification of transported materials, sets minimum standards for cargo containers, and requires that hazardous wastes be tracked from the point of generation to the point of disposal. The implementation of these regulations has resulted in four methods for overseeing the transport of hazardous waste and materials: the uniform manifest/shipping papers, placarding of transportation vehicles, vehicle safety inspections, and a uniform format for reporting incidents which result in a discharge of material.

A uniform hazardous waste manifest follows the transport of hazardous wastes from generation to disposal as specified in Title 22 of the California Code of Regulations. Information required on hazardous waste manifests includes the type of waste being transported, the identification number of the waste, the hazard class, the amount of waste being transported, the name of the generator, the final destination of the cargo, the transporter's license number, the generator's EPA identification number, and the transporter's signature. Hazardous substances are not required by law to be manifested.

Transporters of hazardous substances must carry shipping papers, but these papers are not as detailed as the manifest forms. Shipping papers contain the following information: the name of the material being transported, the identification number of the material, the hazard class, and the amount of material being transported.

Identification on the outside of the vehicle describing the type of waste being transported (termed placarding) is required by federal regulations (49 CFR 172, Subpart F, of the Department of Transportation regulations). The placard displays the identification number or description of the waste/material being transported, and must conform to standards of color, size, and specific markings as outlined in the regulation. Certain wastes/materials, however, are exempt from placarding if the cargo weight is less than 1000 lbs. The exception is any waste/material considered "extremely hazardous." A vehicle transporting any quantity of these wastes/materials, including "empty" containers with residues, must be placarded. These wastes/materials are as follows: certain explosives, certain radioactive substances, flammable solids, and various poisonous substances (49 CFR 172.504).

The third method of regulation is vehicle inspections. In this regard, the safety of the driver, the environment, and the population in the vicinity of the transportation corridor are important. The California Highway Patrol (CHP) conducts inspections under the authority of Section 32001 of the California Vehicle Code. The CHP may inspect the cargo of any hazardous waste/material transporter for any irregularities, without probable cause. The California Highway Patrol Motor Carrier Specialists make annual scheduled inspections of hazardous waste vehicles in order to issue a vehicle certification, as required by the Department of Health Services. In addition, if a waste transporter has a poor safety record, periodic unannounced inspections of the vehicles will also be made. The CHP presently conducts such a program in the County.

The requirement of a uniform format for reporting incidents that result in a discharge of materials allows for tracking of accidents, their causes, and their results. This information is critical for effective risk assessments and risk management programs. The data provided by the incident reporting can be used to develop needed mitigation measures such as training programs or route safety improvements.

7.3 THE ROLE OF THE COUNTY

The County's jurisdiction over highway transportation of hazardous materials and hazardous waste is somewhat limited because of preemption by state and federal law. There are several areas, however, where local efforts and regulations could be implemented to reduce transportation risks. Section 112(b) of the Federal Hazardous Materials Transportation Act (HMTA) provides that a state or local regulation may not be preempted if the U.S. Department of Transportation (DOT) or the courts determine that it affords an equal or greater level of protection and does not unreasonably burden commerce. In determining whether a state or local regulation unreasonably burdens commerce, DOT (and the courts) consider the following:

1. The extent of increased costs and impairment of efficiency resulting from the regulation;
2. Whether the regulation has a rational basis;
3. Whether the regulation achieves its stated purpose; and
4. Whether there is a need for uniformity with regard to the subject concerned and if so, whether the regulation competes or conflicts with other jurisdictions' regulations.

The primary issue areas where local regulation may be justified include route designations, notification requirements, and curfews. In addition, risk reduction can also be achieved through mitigation of transportation hazards and public education.

Route Designations

Hazardous materials routing designations have been established by several cities in other parts of the country including Dallas, Fort Worth, Columbus, Denver, and Boston. In summarizing consistency rulings by DOT, the U.S. Congress Office of Technology Assessment noted that those local regulations found to be consistent (i.e. not preempted) generally provided increased safety and were enacted by a locality in consultation with neighboring jurisdictions.

The California Vehicle Code Section 31304 sets forth the procedures for restricting or prohibiting the transportation of hazardous materials or waste by local governments. Such restrictions will be upheld if:

1. The restricted highway is appreciably less safe than a reasonable alternative highway as determined by either:
 - a. The "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials" prepared by the Federal Highway Administration (FHWA A-IP-80-15); or
 - b. The California Highway Patrol (CHP) or the local jurisdiction determines the restricted highway is located within the watershed of a drinking water reservoir which meets certain criteria;
2. The restriction is not preempted by federal law;
3. The restriction does not eliminate access to pickup or delivery points, fuel, repairs, or rest or food facilities intended to accommodate commercial vehicles;
4. Written concurrence has been obtained from surrounding jurisdictions;

5. The highway is properly posted; and
6. Notification is distributed to appropriate agencies and industry.

The County can address the issue of transportation of hazardous wastes and materials by identifying routes within the County for transportation of these substances. Highway 101, Highway 135, Highway 166, and Highway 1 are the major transportation routes used in the County to move hazardous materials and wastes (see Figure 7-1). Highway 101 is the only major highway through the County and crosses heavily populated areas. There are connector roads in the north County area used to transport wastes from Highway 101 to the Casmalia Resources facility. Highway 154 is the only route in the County prohibited from hazardous wastes transport. This prohibition was established by legislative action-based on the proximity of the highway to Lake Cachuma and a high accident rate.

Additionally, the transportation of rocket propellants through the County to Vandenberg Air Force Base (VAFB) was recently evaluated. For many years Highway 101 was the certified route for the transportation of rocket propellants to VAFB. Concern was raised, however, due to the high toxicity of the material and the populated areas Highway 101 transects. After numerous public hearings and the development of a risk assessment analyzing alternative routes, Highway 101 from the south was de-certified and Highway 166 to Highway 101 in the north certified as the route for transportation of rocket propellants through Santa Barbara County.

Due to the complexity of issues to be addressed in a risk assessment, studies to determine route designations should focus initially on specific materials, such as rocket propellants; specific industries, as addressed in the current assessment of gas liquids transportation (see Section 7.4); or specific facilities, for example, connector routes between Casmalia Resources and the highway.

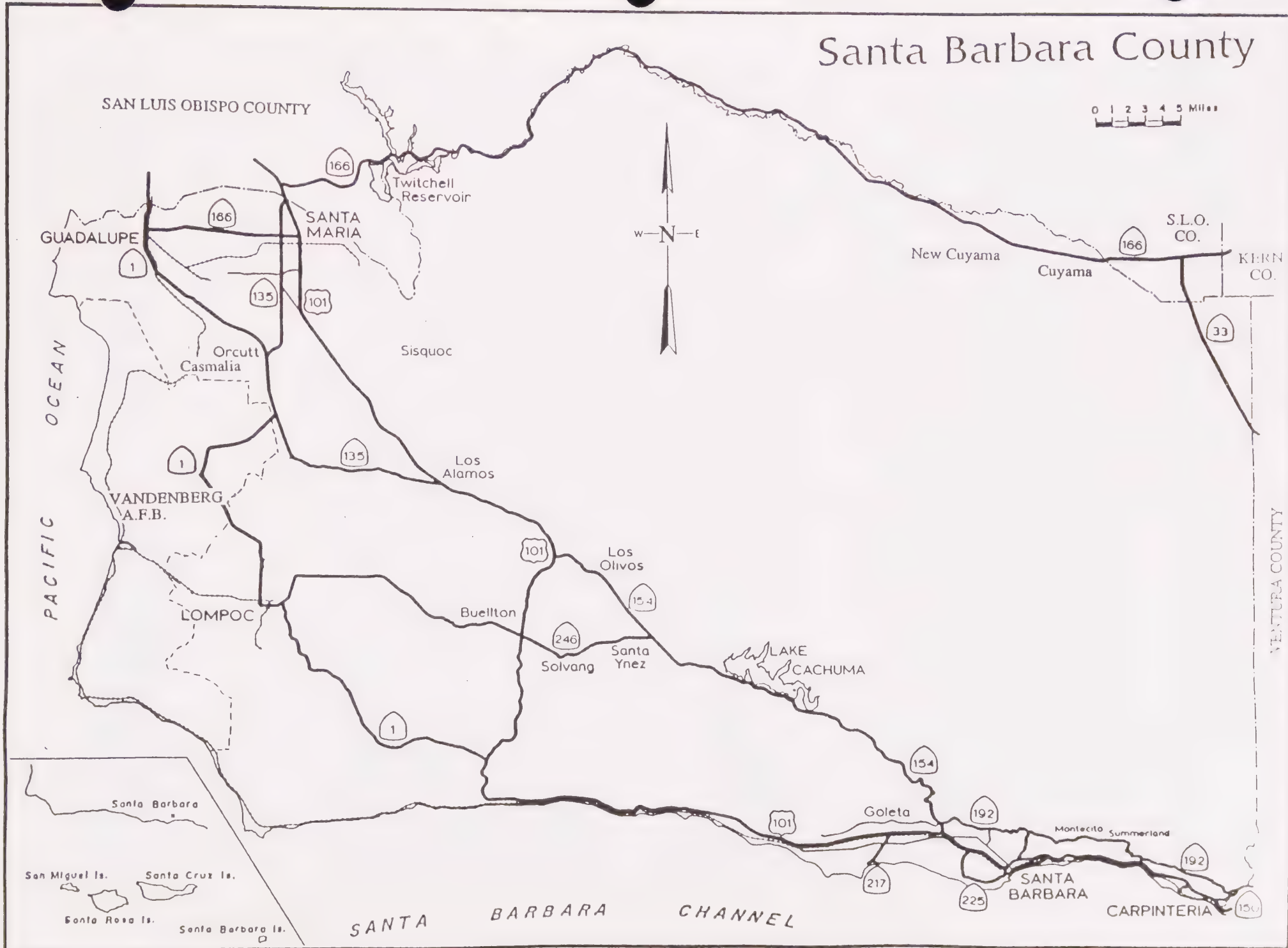
Notification

A second potential role of the County is to require transporters to notify emergency responders before extremely hazardous substances are transported through the County. Although this is presently done for rocket propellant fuel transport, it is not done for the transport of hazardous wastes. Many emergency responders have indicated that advanced warning in itself does not increase their ability to respond should an accident occur. Perhaps a more useful approach would be requiring general information on the types, quantities, frequency and routes of hazardous materials and hazardous wastes regularly shipped through the County. Such information could be used for planning purposes and training of response personnel.

Curfews

Curfews impose restrictions on the hours during which hazardous wastes and materials are allowed to be transported. There are several factors to be considered prior to imposing curfew regulations. Among these are traffic, visibility, accident rates, response times, population concentrations, delays, and how the curfews would affect other jurisdictions.

FIGURE 7-1 MAJOR TRANSPORTATION ROUTES



Again, a risk assessment would be required to compare alternatives and identify hours that would reasonably reduce the risks associated with hazardous materials and waste transportation.

Other Mitigation

In addition to routing, notification, and curfews, local governments can reduce the risks associated with the transportation of hazardous materials and wastes by mitigating or avoiding certain general traffic hazards. For a particular route, areas with a history of high accident rates should be evaluated for road improvements. Potential seasonal or temporary hazards such as fog, floods, and road construction should be identified and procedures established for implementing alternative routes if available. State and local law enforcement agencies should be supported in their efforts to increase patrolling and inspections of hazardous materials and waste vehicles. Safety checklists could be required of local generators or transporters originating within the County boundaries.

Public Information

Providing information on regulations and requirements for transportation of hazardous waste is also important. As mentioned previously, the CHP conducts an inspection program in the County. Through these inspections the CHP has found inadequate placarding and unsafe vehicles, as well as unsafe containment of hazardous materials and wastes. The County should provide information to generators so that they are aware of the requirements for transportation of hazardous materials and wastes, and thus can contract with a reputable transportation company.

Generators should be aware of several Vehicle Code requirements including provisions for special licensing and the need for specialized training. Section 12804.1 in Division 6 of the Vehicle Code specifies that any person hauling hazardous waste must have in his/her possession a valid driver's license for the appropriate class of vehicle to be driven, and a certificate issued by the Department of Motor Vehicles to permit the operation of vehicles requiring placards and hauling hazardous waste. Applicants for that certificate are required to submit a report of a recent medical examination, and submit to a test of knowledge and understanding of the current rules and regulations regarding transportation of hazardous waste. This section was effective January 1, 1987 but has not yet been implemented. In addition, the American Trucking Association's Safety and Security Department has developed a comprehensive motor carrier program for enhanced education of hazardous materials haulers.

7.4 OTHER ISSUES

Rail versus Truck Transport

The County is preparing a risk assessment and risk reduction assessment of transport of gas liquids by rail and truck. County policies require that liquid petroleum gases (LPG) and natural gas liquids (NGL) be transported by pipeline if available. The transport of these

substances on County highways pose a threat to public safety. Both LPGs and NGLs are classified as hazardous materials due to their flammable and explosive properties. Since the volume of LPG and NGL to be transported is expected to increase as a result of offshore oil and gas development, the County has undertaken the preparation of the risk assessment to determine a safe method of transport. The purpose of the assessment is to address the type of incidents that could occur, the probability of an accident, the consequences of an accident, and a consideration of how the risk could be reduced. One of the issues to be evaluated is a comparison of the risks associated with alternative routes of transportation. This risk assessment could serve as an effective tool for similar assessments of other classes of hazardous materials or wastes.

Siting Hazardous Waste Facilities

Another significant issue is associated with the siting of hazardous waste facilities and the transportation of hazardous substances within the County. Transporters should avoid, to the maximum extent possible, residential areas and heavily used commercial or industrial areas. The County could establish routing guidelines that would assist transporters on route selection within County boundaries. Guidelines could be developed from data on accident rate history, population density, and traffic estimates.

7.5 GOALS AND POLICIES

The role of the County and cities in hazardous materials and hazardous waste transportation regulation is limited by the inter-jurisdictional nature of the issue and by state and federal preemption. Local regulations should be based on proper risk assessments and interagency cooperation. Resources should be focused on mitigation of specific hazards. The following goals and policies promote County and city participation in hazardous materials and hazardous waste transportation risk management.

Goals

- 7-1 To ensure the safe transport of hazardous wastes from the source of generation to the point of ultimate disposal.

Policies

- 7-1 The County and cities should promote the strong enforcement of existing laws regarding vehicle safety, inspections, and the hazardous waste manifest system for full protection of public health and the environment.
- 7-2 The County and cities should work with other affected agencies and industries to implement risk management strategies for hazardous waste transportation in the County.

Implementation Program

7-A Risk Management Guidelines

Guidelines are necessary to identify and implement risk management strategies for the transportation of hazardous materials and wastes in the County. The guidelines should be developed in cooperation with the cities, other affected jurisdictions and agencies such as the California Department of Transportation and the California Highway Patrol, and the transportation industry. Possible issues for consideration include but are not limited to the following:

1. Industry specific risk analyses such as the one being completed for transportation of gas liquids;
2. Identification of common accident locations and mitigating road improvements;
3. Avoidance of seasonal or temporary hazards (e.g. fog, floods, road construction); and
4. Other mitigating measures such as route designation, curfews, increased inspection and enforcement, notification, and safety checklists.

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CHAPTER 7 - TRANSPORTATION

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CHAPTER 8

EMERGENCY RESPONSE

8.1 INTRODUCTION

The use, storage, and transportation of hazardous materials and the generation, storage, and transportation of hazardous wastes have greatly increased in Santa Barbara County. These increases can be attributed to the number of businesses now using hazardous materials and generating hazardous wastes, the growth of the oil and gas industry in the County, and the continued use of Casmalia Resources, a Class I disposal site located in northern Santa Barbara County. A higher risk for potential hazardous materials emergencies result from these increases. Such emergencies could be the result of a train derailment, a hazardous waste transportation accident, or an accident at a business or industrial facility. Whatever the scenario, the increased risk of hazardous materials emergencies has resulted in greater responsibilities for businesses handling or generating hazardous materials and hazardous wastes, and the agencies which must respond to these incidents.

Reference is made throughout this chapter to hazardous materials as well as hazardous wastes. As discussed in Chapter 1, the Hazardous Waste Management Plan is concerned primarily with hazardous waste issues. However, for some issue areas such as emergency response, there is no clear delineation between wastes and materials. Hazardous materials, when spilled or otherwise released, or when in inadequately labeled or deteriorating containers, become hazardous wastes.

8.2 EXISTING PROGRAMS AND REGULATIONS

8.2.1 Federal

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Clean Water Act (Section 311) permit the federal government to work with state and local governments to provide an immediate and comprehensive response to the accidental release of hazardous waste/materials. Congress enacted CERCLA, commonly called Superfund, to provide an effective and comprehensive response to the unintentional release of hazardous waste/materials.

CERCLA requires the Environmental Protection Agency (EPA) to revise the National Oil and Hazardous Substances Pollution Contingency Plan to include all of the actions concerning emergency response to hazardous waste/materials incidents which can be taken under both CERCLA and the Clean Water Act. This National Contingency Plan provides the following:

1. A division and specification of responsibilities among the federal, state, and local governments in response action, and appropriate roles for private entities;

2. The national response organization that may be brought to bear in response actions; and
3. The establishment and requirements of federal/regional and federal/local contingency plans, and encouragement of pre-planning for response by other levels of government.

When there has been a hazardous waste release, CERCLA requires the responsible party to notify the National Response Center in Washington immediately, as well as local response teams. Depending on the severity of the situation, a National or Regional Response Team may be involved. In general, the National Response Team is activated as an emergency response team when an oil discharge or hazardous substance release:

1. Exceeds the response capability available to the scene manager at the incident site;
2. Crosses regional boundaries;
3. Involves significant population hazards or national policy issues, substantial amounts of property, or substantial threats to natural resources; or
4. Intervention is requested by any National Response Team member.

The Regional Response Team is activated as an emergency response team when a discharge or a release:

1. Exceeds the response capability available to the scene manager at the incident site;
2. Crosses regional boundaries; or
3. May pose a substantial threat to public health, welfare, or the environment, or to regionally significant amounts of property.

When the National Response Center is notified of a release, the lead responsibility for handling the situation is assumed by the EPA or the United States Coast Guard. The lead responsibility for accidental releases in or near coastal waters is vested with the Coast Guard. Responsibility for all other emergencies occurring on land or inland of the coastal zone belong with the EPA, as specified by EPA/Coast Guard agreements.

In 1986, the Superfund Amendments and Re-authorization Act of 1986 (SARA) was enacted into law. The act contains a specific section, Title III, which deals with hazardous materials emergency response planning and community right-to-know. The emergency response component requires the governor to designate a state emergency response commission who then must designate local emergency planning districts. In California, the districts are the regions previously designated by the California Office of Emergency Services. Santa Barbara County shares Region I with San Luis Obispo, Ventura, Los Angeles, and Orange Counties.

The primary responsibility of the local committees is to develop a region-wide emergency response plan. The community right-to-know component requires businesses to submit material safety data sheets of the chemicals they have onsite to the local emergency planning committee, the state emergency response commission, and the business' local fire department. Included with the inventory must be the general location of the chemicals, an estimate of the average daily use of chemicals, and an estimate of the maximum amount of chemicals present at the facility at any time during the preceding year.

Since California had an existing Emergency Planning and Community Right To Know Law (AB 2185/2187) at the time SARA was passed, the state commission and regional committees are working with the EPA and local jurisdictions to make use of established programs and avoid duplication to the greatest extent possible. The intent and data mandated by both laws are quite similar, though procedures differ greatly.

8.2.2 State

The Carpenter-Presley-Tanner Hazardous Substance Account Act of 1981, commonly referred to as the State Superfund, provides the state with authority and funding to respond to the release of hazardous substances. The state Superfund provides funding for the purchase, by state or local agencies, of hazardous waste/materials emergency response equipment and other preparations for response to the release of hazardous waste/materials. It also maintains a reserve account for emergency corrective actions.

In preparing for hazardous waste incidents, the state Office of Emergency Services (OES) has developed the California State Hazardous Material Incident Contingency Plan. This plan describes the responsibilities of the state agencies in controlling and remedying hazardous waste/materials incidents.

Cleanup of a hazardous material spill is the responsibility of the individual in possession of the material at the time of the spill. If the incident occurs on a federal or state highway and the responsible party cannot or does not initiate cleanup, CALTRANS performs the service either directly or under contract depending on the circumstances, and then seeks reimbursement.

The state Superfund provides limited funding for cleanup actions. However, parties at fault for the release of hazardous waste/materials are liable for the costs of damage caused by the release, and for cleanup and restoration of the environment.

The state legislature recognized the risks hazardous materials and hazardous waste pose to emergency responders and the community, and enacted the Release Response Plans and Inventory Law (AB 2185/2187, 1985/86, Chapter 6.95 of the California Health & Safety Code, Section 25500 et. seq.). This law, commonly known as the Community Right to Know Law, requires businesses that handle certain quantities of hazardous materials or hazardous waste, and counties (and cities if they choose) to develop hazardous materials emergency response plans. The business emergency response plans or "Business Plans" provide site-specific emergency response procedures which discuss how employees will respond to hazardous materials emergencies at their businesses. In addition, the Business Plans provide

an inventory of the hazardous materials and the hazardous wastes businesses have onsite and where these materials are located. The County-wide emergency response plan or "Area Plan" details the responsibilities of government responding agencies and the procedures they must follow when hazardous materials emergencies occur. By developing hazardous materials emergency response plans, both businesses and public responders are better equipped to respond to these incidents and can therefore reduce the impacts these incidents may have to life, property, and the environment.

Additionally, AB 3777 (1986, amended by AB 1059 in 1987 and adding sections 25531 et. seq. to Chapter 6.95 of the Cal. Health and Safety Code) mandates businesses that handle certain quantities of acutely hazardous materials, as defined by the EPA, to submit a registration form to the local administering agency. The administering agency can require the business, if warranted, to complete a Risk Management and Prevention Plan (RMPP). The RMPP must include evaluation of past accidents and control equipment, and risk detection/reduction measures based on a worst case offsite consequence analysis. All new and modified facilities handling these quantities of an acutely hazardous material will be required to submit a RMPP.

8.2.3 County

The Santa Barbara County Area Plan has been developed pursuant to AB 2185/2187. It is a workable plan pertaining to both the incorporated and unincorporated areas in the County and identifies risks, details response procedures and agency responsibilities, and contains a training program for responding agencies. In addition, the plan contains an Oil and Gas Emergency Response Plan as an appendix. This plan was included due to the extensive oil and gas development occurring in Santa Barbara County. The Oil and Gas Emergency Response Plan details the emergency response resources available at each oil and gas facility and how oil companies can provide assistance to one another if a major incident were to occur.

The Santa Barbara County Area Plan is an informational document, providing an overview of the County's role in hazardous materials emergency response. For example, the plan contains a risk assessment which displays areas in the County where the largest number and quantity of hazardous materials exist. The plan also defines relevant hazardous materials terms and abbreviations. Agencies which respond to hazardous materials emergencies and those agencies' responsibilities are also included in the plan. Since the plan was intended for emergency responders, it also contains specific emergency response procedures for them. The major emergency response agencies and their responsibilities are listed below.

Law Enforcement (CHP, Police): Scene manager for on-highway incidents; ensures security of incident, traffic and crowd control; notifies other agencies; takes steps to protect life; prevents handling of hazardous materials; and initiates legal action against parties responsible for the spill.

Fire Service: Scene manager for off-highway incidents; establishes perimeter lines; protects life and prevents spreading and handling of materials; provides notification

of appropriate agencies in the event an evacuation appears necessary; and trains, equips, and maintains in a state of readiness, a Hazardous Materials (Hazmat) Response Team.

Hazmat Team: Provides specialized equipment to manage a hazardous materials emergency, monitors concentration and distribution of hazardous materials during the response to the incident; collects samples for hazardous materials analysis; in coordination with County Environmental Health Division (EHD), assists Scene Manager/Incident Commander in identifying unknown spilled materials; and provides spill containment and initial mitigation.

Environmental Health Division: Assists in identifying spilled materials; provides information on handling and disposal procedures and protection and safety procedures for hazardous materials; determines contractor for cleanup and oversees cleanup activities; and is responsible for the initiation of legal action against responsible parties.

The Area Plan lists procedures to be followed in the event of a hazardous substance release or fire. There are five basic stages in the response to an emergency: 1) discovery and notification, 2) evaluation and identification; 3) initiation of countermeasures; 4) hazard reduction, cleanup, and disposal; and, 5) documentation and cost recovery. The plan discusses each of these stages and the duties which must be performed by the responding agencies during each stage.

Information received from the Business Plan component of the AB 2185/2187 program is integrated into the Area Plan through the AB 2185/2187 data management system. In the Business Plans, businesses are required to submit inventories of the hazardous materials and wastes they have on site and the locations where these materials are stored and handled. Businesses must also provide the names of people to contact if a hazardous materials incident at their business were to occur. This information will be collected and verified by the EHD and entered into a computerized data management system. Emergency dispatchers, EHD and fire department hazardous materials response personnel, and the Office of Disaster Preparedness will have access to this data. This allows emergency response personnel, both first responders and follow-up teams with special training, to know what materials are on site when they respond to an incident at a business.

The AB 2185/2187 Area Plan addresses and clarifies the cities' and the County's hazardous materials emergency response procedures and also integrates into the emergency response plan data from businesses which handle hazardous materials. The result is a comprehensive hazardous materials emergency response plan which benefits emergency responders and the community.

To facilitate emergency planning by industry, the Santa Barbara County Office of Disaster Preparedness and local businesses have recently initiated an industry Community Awareness and Emergency Response (CAER) organization. The program is modeled after an active CAER group in the Los Angeles area. The purpose of the group is to directly involve industry with emergency response planning and to encourage mutual aid among industries

that handle hazardous materials and wastes. The Los Angeles CAER group has conducted wide-scale emergency exercises with industry and response personnel. Local industry has been very receptive to forming a CAER group. This effort should continue to be supported by the County and cities.

Santa Barbara County Energy Division of the Resource Management Department is conducting a study, the Marine Emergency Management Safety Program, which examines the potential for emergencies which can occur offshore. These emergencies can include tanker collisions, tankers colliding with oil and gas platforms, and emergency incidents such as fires which may occur on the platforms. The study also identifies response resources which are available to combat these problems and makes recommendations for increasing response capabilities offshore.

8.2.4 Coordination of Government Response

Coordination of the response capabilities among the various agencies and levels of government is vital to the smooth operation of an emergency response program. Coordination must take into account responsibilities assigned to the federal, state, and local agencies responding to an emergency incident. These responsibilities are general in nature and may be preempted by other agencies depending on the situation. The interaction of federal, state, and local agencies in relation to an emergency response program is often determined by the location, severity of the incident, and the capabilities and resources available. The federal government will usually take an advisory and coordinating role, except in cases where there is a monumental threat of a release or where the state and local agencies do not have the resources to handle the situation. The state role is mainly one of providing information, notification, cleanup, funding, and assistance. The local agencies usually provide the most comprehensive response to an emergency incident.

8.3 GOALS AND POLICIES

Effective emergency response is critical to minimizing the risks associated with hazardous materials and hazardous waste incidents. Planning, training, and response exercises can improve response of both industry and public responders. Goals and policies for enhancement of current emergency response programs are presented below.

Goals

- 8-1 To have a comprehensive and cohesive emergency response program within the County to protect the public health and safety.

Policies

- 8-1 Any land use permit for a hazardous waste generator or a hazardous waste facility shall require submittal of an emergency response plan prior to operations, if such a plan is required under Chapter 6.95 (section 25500 et seq.) of the California Health and Safety Code.

- 8-2 The County in conjunction with the cities, other agencies, and industry should continue to conduct wide-scale hazardous materials/waste emergency response exercises on a regular basis.

Implementation Program

8-A Emergency Response Plans

1. Maintain a guide to preparing emergency response plans for hazardous waste generators and hazardous waste facilities.
2. Amend the Zoning Ordinance to include in both the discretionary and ministerial permitting processes, provisions for submittal of an emergency response plan prior to operations, if such a plan is required under Chapter 6.95 (Section 25500 et. seq.) of the California Health and Safety Code.

REFERENCES

CHAPTER 8 - EMERGENCY RESPONSE

1. California Health and Safety Code
 - a. Hazardous Materials (Division 20, Chapter 6.95, Sections 25500 through 25521)
 - b. County Health Emergencies (Division 1, Part 2, Chapter 1158, Sections 470-474)
2. California Hazardous Material Incident Contingency Plan, 1982.
3. County of Santa Barbara Emergency Response Plan, June, 1988.
4. County of Santa Barbara Multi-hazard Functional Plan (MHFP), January, 1989 (In progress).
5. State of California Vehicle Code, 1987.

CHAPTER 9

STORAGE OF HAZARDOUS WASTES

9.1 INTRODUCTION

Proper storage of hazardous waste is a significant component in the development of an effective hazardous waste management program; improperly stored wastes pose a risk to the environment as well as to public health and safety. Regulations concerning the storage of hazardous materials and hazardous waste are currently implemented by the County. These regulations focus on preventing the contamination of the air, water, or soil. This chapter presents a brief discussion of storage regulations, a discussion of how Santa Barbara County implements these regulations, and an assessment of the County's program.

Reference is made in this chapter to hazardous materials as well as hazardous waste. As discussed on Chapter 1, the Hazardous Waste Management Plan is concerned primarily with hazardous waste issues. But for some issue areas, such as storage, there is no clear delineation between the issues associated with hazardous wastes and those of hazardous materials.

9.2 RESPONSIBLE AGENCIES AND LEGISLATION

Different agencies regulate the storage of hazardous materials and hazardous waste depending on the type of containment and the material. The regulations and programs for hazardous materials and waste storage can be separated into four general categories:

1. Regulations for underground storage of hazardous materials;
2. Storage regulations for hazardous waste generators;
3. Inventory reporting and emergency planning requirements; and
4. Employee training and worker right to know regulations.

These four categories are discussed below.

9.2.1 Regulations for Underground Tanks

Federal storage regulations for hazardous wastes and materials are found in the Resource Conservation and Recovery Act (RCRA), Subtitle C, and are administered by the Environmental Protection Agency. These regulations deal with the storage of hazardous waste and materials in underground tanks. There are two separate programs for underground storage tanks. One program applies to hazardous wastes identified in Subtitle C of RCRA. The other deals with underground storage of "regulated substances" as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund). The latter program is the underground storage tank program. Federal law

regulates over 300 hazardous materials and products in addition to hazardous wastes. EPA regulations (RCRA) require that owners or operators of existing tanks have:

- leak detection or inventory control system and tank testing;
- record keeping and reporting; and
- specific procedures for corrective action in the event of a leak.

Two state laws were enacted in 1984 regulating underground storage of hazardous materials. The Cortese Bill (AB 2013, 1984) required all underground storage vessels including tanks, pits, ponds, lagoons, and sumps, to be registered with the State Water Resources Control Board (SWRCB). This was a one time registration and the law was terminated in 1987. The Sher Bill (AB 1362, 1984) requires owners of underground tanks to obtain a permit to operate and pay fees to the local enforcement agency. Leak detection systems are required on all tanks, and secondary containment of tanks and piping is required for all new tanks. Agricultural tanks with a capacity less than 1100 gallons are exempt from these requirements. Regulations are contained in Chapter 6.7 of the California Health and Safety Code, Section 25280 et. seq.

Santa Barbara County Ordinance 3421 was passed in 1983 before state and federal laws regulating underground storage of hazardous materials came into effect. The ordinance establishes similar regulations to those in state and federal laws and designates the Environmental Health Division (EHD) as the local enforcement agency. Tank owners or operators pay an annual permit fee to EHD. Leak detection systems are required on all tanks, and secondary containment of tanks and piping is required on all new tanks. A permit must also be obtained to remove or install an underground storage tank. Hazardous materials specialists review the plans and oversee the removal or installation. Abandoned tanks must be cleaned out prior to removal, and inspected for deterioration when taken from the ground. If leakage is suspected, the underlying soil must be analyzed for contamination.

County and city fire departments also regulate underground storage of flammable and combustible liquids, and other hazardous materials as required by Article 79 and Article 80 of the 1985 Uniform Fire Code.

9.2.2 Storage Regulations for Hazardous Waste Generators

In addition to the above requirements for underground storage, many other aspects of storage and containment of hazardous materials and hazardous waste are regulated. Title 22 of the California Code of Regulations (previously the California Administrative Code) describes the compliance requirements for accumulating and storing waste. The requirements of Section 66508 et. seq. are summarized below.

- A. The waste must be stored in a secure enclosure with applicable visible signs such as "No Smoking," "Caution," "Fire Hazard," etc.

- B. The container storage area must be designed and operated to contain any leaks or spills.
- C. Waste must be placed in containers that are in good condition. The containers used for storage do not need to meet the Department of Transportation's (DOT) shipping container specifications, but they must be structurally sound and free of leaks. Prior to shipping, the waste must be placed in a DOT-approved container.
- D. The waste must be compatible with container.
- E. Containers must be clearly labeled with the date on which accumulation begins on each container; the words "HAZARDOUS WASTE" on each container; the chemical name (or another descriptive name); whether the waste is a solid or a liquid; identification of the hazardous properties of the waste (for example, flammable, corrosive, toxic, etc.); and the name and address of the generator.
- F. Labels must be placed on all non-stationary containers in which hazardous waste is stored. These labels must include the composition and physical state of the waste; the hazardous properties of the waste; and the name and address of the generator.
- G. The containers must be kept closed during storage except when adding or removing contents.
- H. The hazardous waste generator must inspect the container storage area for leaking containers and other deterioration of the containment system at least weekly.
- I. Incompatible waste must be kept separated by barriers such as walls or berms.
- J. Ignitables and reactive wastes must be stored 50 feet from the facility property line.
- K. Wastes must be removed every 90 days.

The Environmental Health Division (EHD), local fire department and the Department of Health Services (DOHS), should be consulted if there is any question concerning the design of a building containing hazardous wastes or a storage facility. This would ensure that specific requirements that may be applicable are incorporated into the design of a facility or to seek a variance if it is not feasible to meet storage specifications.

Federal law (RCRA) and state law (Health and Safety Code) place an onsite storage accumulation limit of 90 days on hazardous waste generators. Storage of wastes longer than 90 days requires a transfer, storage, and disposal facility (TSDF) permit from DOHS. The 90-day period is intended to allow a generator to collect enough waste to make

transportation cost-effective. Instead of paying to haul several small shipments of waste, the generator can accumulate waste until it can be economically transported.

The 90 day storage limitation caused concern among many small businesses with limited resources who could not afford the cost of constant transport of small volumes of hazardous wastes. In March 1986, EPA modified the existing RCRA, Subtitle C, regulations for hazardous waste generators who generate between 100 and 1,000 kilograms/month. The modifications extend the storage times before a permit is required from 90 days to 180 days, or 270 days if the waste must be shipped over 200 miles. Although the 90 day limitation has been extended under federal law, state law (Section 25123.3 of the Health and Safety Code), maintains the more restrictive requirement of 90 day storage for large and small quantity generators, but allows the small quantity generator to accumulate up to 100 kilograms before the 90 day time limit is initiated.

Local fire departments also regulate the storage of hazardous materials and require containment standards, setbacks from buildings, and the construction of fire walls if necessary. Fire department regulations for the storage of flammable and combustible liquids are contained in Article 79 of the Uniform Fire Code and regulations for the storage of hazardous materials in Article 80. Santa Barbara County and city fire departments are in the initial stages of adopting a new Uniform Fire Code. Articles 79 and 80 are greatly expanded in the new Code, which is expected to be adopted locally in early 1989.

9.2.3 Inventory Reporting and Emergency Planning Regulations

In September 1985, Governor Deukmejian approved Assembly Bill 2185 which was subsequently amended in 1986 by Assembly Bill 2187 and incorporated into Chapter 6.95 of the Health and Safety Code. This legislation, commonly known as the "Community Right to Know Law", requires that information be made available to the public, government officials, and emergency response personnel regarding the location, type, approximate quantity, and health risk of hazardous materials and hazardous waste stored at business facilities. The bill requires that the management of hazardous materials and response to incidents be addressed in the following documents:

Area Plan - The area plan is developed by the designated local administering agency. It contains procedures for responding to hazardous materials incidents on a county- or city-wide basis.

Business Plan - The business plan is developed by each business which handles, stores, uses, or disposes of hazardous materials or hazardous waste in quantities greater than or equal to 55 gallons, 500 pounds, or 200 standard cubic feet at STP (standard temperature and pressure) of compressed gas. The plan must provide a chemical inventory with the location of hazardous materials and waste stored; an emergency response plan; and employee training procedures.

If the materials handled in these quantities are classified as acutely or hazardous materials by the EPA, AB 3777/1059 (1986/87) allows the local administering agency

(EHD) to require additional information from the business in a Risk Management and Prevention Plan (RMPP). The RMPP must include evaluation of past accidents and control equipment, and risk detection/reduction measures based on a worst case offsite consequence analysis.

Inspection Plan - The administering agency must conduct onsite inspection of each business to verify and supplement information gathered through the Business Plans.

Any business which handles less than the above stated quantities of a hazardous material or waste is exempt from the requirement of AB 2185/87. Hazardous materials contained solely in a consumer product for direct distribution to and use by the general public are also exempt unless the administering agency determines the business plan is necessary for protection of the public health, safety and environment. Agricultural businesses are not required to complete the emergency response plan or employee training procedures, but must comply with specific requirements for posting areas where pesticides, petroleum fuels, oils, or fertilizers are stored.

Under the Community Right to Know Law, the general public is entitled access to certain information regarding the type, quantity, and hazard of materials stored at business facilities. The legislation provides protection for trade secrets and the specific location of materials at the facility. Such information is disclosed only to those who need it for immediate protection of the public health and safety.

Additionally, in 1986 the Federal Government approved the Superfund Amendments and Re-authorization Act (SARA) which also contains provisions for emergency planning and full disclosure in Title III.

The purpose of the SARA Title III program is to provide state-wide and regional emergency planning and public "right-to-know" information on businesses and facilities that handle certain quantities of hazardous materials. The requirements are similar but not identical to requirements under the state law. Local, regional, and state agencies are working with the EPA to satisfy requirements of both laws with minimum duplication.

The full disclosure laws are aimed at protecting first emergency responders and the public, and assisting specially trained follow up responders, in the event of a spill or accident.

9.2.4 Regulations for Hazardous Materials and Waste Storage in the Employee Work Area

The federal Hazard Communication Standard (29 CFR 1910.1200) and the state Employee Right to Know Law (Cal. Gov. Code, Title 8) also regulate the storage of hazardous materials and waste for employee protection. Businesses are responsible for ensuring that all materials are properly labeled, and that employees are made aware of the hazards, can access health and safety data, and are adequately trained in protective measures and emergency procedures. These laws are administered through federal and state Occupational Safety and Health Agencies (OSHA).

Specific training requirements for employees that handle hazardous waste are addressed in the Hazardous Waste Control Law (Chapter 6.5 of the Cal. Health and Safety Code). Employee training for emergency response is required in the Community Right to Know Law (Chapter 6.95 of the Cal. Health and Safety Code). Both these requirements are enforced locally through the hazardous waste generator and AB 2185/87 programs administered by the EHD. Businesses must provide a written program describing the employee training procedures and must keep record of initial and refresher training for all employees.

9.3 EXISTING PROGRAMS

9.3.1 Storage of Hazardous Waste and Materials in Underground Tanks

The Environmental Health Division (EHD) requires permits for underground hazardous materials storage tanks. The permits require the owner to install a leak-detection system and perform inspections of the system. If a tank is to be abandoned, a permit is required to ensure the tank is completely emptied, removed from the ground, and the underlying soil sampled if necessary to detect any contamination.

EHD submits monthly site mitigation reports on the status of leaking underground storage tanks to the Regional Water Quality Control Board. The report includes the name and location of the tank, the nature of the problem, the discovery date, the investigator, and the status of clean-up activities. These reports are available to other interested agencies and the public. EHD is also developing a program under the Sher Bill that will provide information to the Regional Water Quality Control Board regarding the number and nature of permitted underground tanks in Santa Barbara County. These reports will include information about the location, type, and inspection results of underground storage tanks. EHD is responsible for permitting all storage of hazardous materials and wastes in underground tanks. There is no general fund support for the underground tank program, it is totally funded through fees applied to the businesses and industry which require permits. The fee is based on the number of tanks.

The current staff for the underground tank program must also devote their time to the hazardous waste generator program, emergency planning and community right to know program, and response to emergencies, complaints, and public inquiries. Staff is assigned a certain district in the County and inspection, monitoring, and response are made in that area for all programs. A hydrogeologist has been designated to aid in the monitoring and inspection of leak detection systems on underground tanks.

9.3.2 Storage Regulations for Hazardous Waste Generators

Regulations for the storage of hazardous waste are enforced through the Environmental Health Division (EHD) hazardous waste generator program created under County Ordinance 3503. State regulations are enforced locally as a result of a Memorandum of Understanding (MOU) with the State Department of Health Services. Generators are

required to obtain an annual permit from EHD and are inspected for compliance annually by hazardous materials specialists. There is no general fund support for the hazardous waste generator program. It is totally funded through permit fees. Again, staff inspects businesses within an assigned district and works concurrently under other hazardous materials programs.

Routine inspections of every business are also conducted by the fire departments. Fire inspectors enforce specific storage regulations and are also trained to recognize storage practices that create fire hazards or safety hazards for emergency response personnel.

9.3.3 Inventory Reporting and Emergency Planning

The Environmental Health Division (EHD) is the administering agency for the Community Right to Know and Emergency Planning Law (AB 2185/87) for the entire County. The Area Plan is being developed by the County Office of Disaster Preparedness in conjunction with EHD and other responding agencies. Forms were developed to assist businesses with completing their chemical inventory and guidelines established for the emergency response plan and employee training procedures. Inspections are conducted by the hazardous materials specialists concurrently with underground tank and hazardous waste generator inspections. Costs of the program are recovered through plan review fees that are based on the number and volume of chemicals a business handles. There is no general fund support for this program.

The information collected through this program will be made available in several ways. Emergency contacts and chemical inventories will be maintained by EHD on computer and made available 24 hours a day to responding and coordinating agencies. Businesses will be required to keep a copy of their complete Business Plans, including emergency response procedures, onsite and available for use at all times. The public may request in writing certain information about a business. The record for that facility will be reviewed by EHD for trade secrets or other proprietary information. If appropriate, EHD will release the requested information. There will be no direct access to files or computer records by the general public.

SARA Title III parallels the existing AB 2185/87 program in many ways. EHD is working with the State Office of Emergency Services and the EPA to determine which requirements of SARA Title III can be satisfied directly through AB 2185/87 and how best to integrate additional components in order to minimize duplication of efforts in both the public and private sector. Funding for this program has not yet been specified.

9.4 ASSESSMENT OF EXISTING PROGRAMS

There has been extensive legislation and many programs implemented concerning the storage of hazardous wastes and materials. The programs and legislation reflect past problems with leaking underground tanks, uncontrollable burning chemical warehouses, and leaking storage ponds which have impacted public health and cost millions of dollars to remedy.

The existing regulations and programs appear to adequately provide for the safe storage of hazardous materials and waste. There are several areas, however, where better coordination and collective efforts can be made to reduce costs and improve effectiveness of the existing programs. These are discussed below.

9.4.1 Home Occupations

The implementation of the Community Right to Know Law has raised concern regarding the storage of hazardous materials for home occupations. Some examples of home occupations which may involve storage and handling of materials in excess of the specified volumes are pool chemical supplies, commercial landscaping, furniture stripping, and pest control. Pest control businesses often store and handle methyl bromide gas, a highly toxic chemical. Release of this gas can cause serious health impacts to neighboring residents if leaks are not detected. Hazardous materials are frequently stored in garages and yards of home occupations. Proposed fire code regulations for storage of materials would require extensive construction and monitoring systems similar to those required for a commercial operation.

The Santa Barbara County Zoning Ordinance defines home occupation as one "which is clearly incidental and secondary to the use of the residential lot for dwelling purposes and does not change the character of such residential use." The County Zoning Ordinance, however, contains no restrictions on the use or handling of hazardous materials or wastes for home occupations. Home occupations are routinely approved by zoning clearance as long as there is compliance with other limitations on vehicular traffic and advertising. The intent of home occupations is to allow small-scale businesses such as typing services, woodworking, or gardening to be conducted without the burden of a commercial location. Even though some of these businesses may not have traffic or noise impacts, they may impose risks associated with hazardous materials handling and storage in residential areas.

9.4.2 Comprehensive Data Base

Programs for inspection of hazardous materials and waste storage are being administered by the Environmental Health Division, Fire District, City Fire Departments, and private businesses. The Community Right to Know and Emergency Planning Law requires communication and sharing of information between the various jurisdictions. Other programs require collection of common information regarding volumes, types of waste, etc. The County is investigating options for computerized data base management to assist in coordinating the efforts of the various agencies.

9.4.3 Inspections and Enforcement

As mentioned above, several programs are involved in collecting data and inspecting businesses which store, generate, or handle hazardous materials and wastes. Each of these programs is funded by fees applied to the business for individual inspections. It may be more efficient if information and fees were collected for all programs at one time. Fees will be applied once per year rather than two or three times per year for programs administered by EHD. Additional measures for increased cooperation and coordination between agencies should be investigated.

9.4.4 Establish Priority for Inspection and Enforcement

Proper storage and handling of hazardous materials and waste is an important step in the protection of public health, safety, and the environment. This aspect of hazardous waste management should be given a priority of staff and funding within the total waste management system.

A highly effective and efficient hazardous materials and waste inspection and enforcement program should reduce the frequency of leaks, spills, and improper storage. Inspection and education of local businesses and occupancies is also the most effective method of achieving source reduction or waste minimization.

The Environmental Health Division program for waste minimization will be more successful with the encouragement of management practices in cooperation with business and industry. Certainly, enforcement and penalties for illegal operations will still be necessary, but the most effective management approach is education and active encouragement through direct cooperation with business and industry.

9.5 GOAL AND POLICIES

Safe and proper storage of hazardous materials and hazardous waste is critical for the protection of the public health and safety and the environment. Several federal, state, and local laws regulate underground tanks, storage of hazardous waste, inventory reporting, emergency planning, and employee training for the storage of hazardous materials and waste. Education, inspections, and enforcement are key to effective regulation. The use of hazardous materials and generation of hazardous wastes by home occupations must be reviewed to assess potential risks to nearby residents and regulated if necessary to ensure public safety. Goals and policies for the improvement of existing programs for hazardous materials and hazardous waste storage are presented below.

Goal

- 9-1 To protect the public health and safety and the environment from risks posed by improper storage of hazardous materials and hazardous waste.

Policies

- 9-1 The County and cities shall encourage the proper storage of hazardous materials and hazardous waste through continued inspection efforts and public education regarding proper storage methods and regulations.

Implementation Programs

9-A Inspections

Maintain a thorough and well-supported inspection program that would reduce costs and future liabilities associated with tank leaks, emergency spills, and fires from

onsite storage of hazardous materials or wastes. To this end, the County should evaluate the need for additional personnel and funding to support the inspection programs. In addition, the program should evaluate the feasibility of consolidating inspections and fees for the various programs involved in hazardous wastes and materials storage.

9-B Home Occupations

1. Develop guidelines that would identify occupations which are not suited in residential areas because of the use of hazardous materials or generation of hazardous waste. The guidelines should consider the following items:
 - a. The types and quantities of hazardous materials or hazardous waste that will not be allowed in home occupations; and
 - b. The types of occupations that generally use hazardous materials or generate hazardous waste in significant quantities to be of concern.
2. Amend the zoning ordinances to implement the guidelines developed for home occupations and to require findings for the approval of home occupations.
3. Develop procedures to ensure the proper regulation of home occupations that use hazardous materials or generate hazardous waste.
4. Develop procedures to phase-out existing permitted home occupations that are not allowed under adopted guidelines.

REFERENCES

CHAPTER 9 - STORAGE

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2. Johnson, Captain Charles, Santa Barbara County Fire Department, pers. comm.
3. Rhode, Barbara, California Department of Health Services, pers. comm.
4. Santa Barbara County, Ordinance No. 3421, "Hazardous Materials Storage Ordinance."
5. Santa Barbara County, Zoning Ordinance.
6. Ventura County, 1988. Draft Hazardous Waste Management Plan.

CHAPTER 10

CONTAMINATED SITES

10.1 INTRODUCTION

Contaminated sites are sites which have known soil, air, or groundwater contamination due to chemical spills, leaking underground storage tanks, leaking pipes and drums, and abandoned disposal sites. These sites require proper cleanup to protect public health, safety, and the environment.

This chapter discusses, as directed in sections 3.5.13 and 3.6.7 of the DOHS Guidelines, the existing contaminated sites program, focusing mainly on the central issues in Santa Barbara County. Potential problems associated with these sites, assessment of sites, authority and ranking for the cleanup of these sites, remedial measures and strategy for implementing a cleanup program are included. Land use issues regarding land use on or around contaminated sites are also addressed.

Until recently, the lack of comprehensive laws regarding hazardous waste management and incomplete records of type of waste, quantity of waste, and location of hazardous waste treatment, storage, and disposal facilities has led to difficulties in tracing boundaries of operation, finding responsible parties, and fully assessing the extent of the potential contamination from abandoned and contaminated sites. The most common threat of abandoned and closed sites is the potential migration of hazardous contaminants through the land to water supplies, particularly groundwater aquifers. Other problems associated with contaminated sites are toxic emissions, improper land use in areas on or surrounding contaminated sites, and threats to public health and safety.

10.2 AUTHORITY FOR THE CLEANUP OF CONTAMINATED SITES

The cleanup of contaminated and abandoned sites is authorized under the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund) and the Carpenter-Presley-Tanner Hazardous Substance Account Act of 1981, referred to as the State Superfund. Both Acts provide the authority and funding necessary for federal and state governments to respond directly to any problems at abandoned and contaminated hazardous waste sites, not only in emergency situations, but also at sites where longer-term permanent remedies are required.

10.2.1 Federal Regulation

CERCLA establishes a trust fund for cleaning up hazardous waste sites. This "Superfund" is financed from taxes on the manufacture or import of petroleum and certain chemicals and from federal appropriations. The Superfund provides for two types of responses to hazardous waste substance releases or threatened releases: removal and remedial. Removal

actions are short-term responses to address immediate and significant dangers at any hazardous waste site, but are not necessarily final solutions; remedial responses are taken to provide a permanent remedy.

10.2.2 State Regulations

States are responsible under the Federal Superfund to share in the costs of the design and construction phases of remedial action. Before a remedial action can be taken, states must contribute 10 percent of the cleanup costs for sites that were privately owned at the time of disposal of hazardous wastes and at least 50 percent of the costs for sites that were publicly owned.

The State Superfund was enacted to make adequate funds available for the State to assure payment of its share of the cost of remedial action. It created a Hazardous Substance Account in the California general fund to finance cleanup operations. The account is maintained at a level of \$15 million by means of a tax levied on generators.

The State Superfund also calls for the identification and cleanup of non-priority sites, thereby directing State resources to sites which are not cleaned up by the Federal Superfund. Recent legislation, Chapter 1439 of the 1985 Statutes, amended and added sections to the Health and Safety Code that authorized the sale of bonds, the proceeds to be used by the DOHS to implement the Hazardous Substance Cleanup Bond Act of 1984. The legislation also eliminated the former State Priority Ranking List and replaced it with a new listing consisting of three categories of sites, called the Listing of California Hazardous Waste Sites. The DOHS, which published the new listing of hazardous waste sites in January, 1986, is required to review and publish, at least annually, a listing of the three categories of sites.

10.2.3 Local Regulations

Chapter 6.5 of the California Health and Safety Code, the Hazardous Waste Control Law, defines hazardous wastes, and gives the local Health Officer the authority to regulate hazardous waste. Santa Barbara County Ordinance No. 3421, sections 18.23.5-18.23.9 describes the responsibilities of underground tank owners in regard to unauthorized releases from underground storage tanks. The ordinance defines unauthorized releases, proper tank repair procedures, and owner cleanup responsibilities. Authority is given to the Health Officer to direct remediation procedures. The handling of hazardous wastes and emergency procedures are also described in this section.

The California Water Code gives the local Regional Water Quality Control Board (RWQCB) authority to mitigate groundwater contamination at contaminated sites. The RWQCB must make decisions about the discharge of wastes to water sources and the effects of discharge to water quality.

10.3 EXISTING PROGRAMS

10.3.1 General Procedures

Santa Barbara County's Site Mitigation Program administered by the Environmental Health Division (EHD) is responsible for the supervision of cleanup at contaminated sites throughout the County. The objective of this program is to identify contaminated sites, and to find a permanent remedy that is technologically feasible and reliable that effectively reduces the danger of contamination, and that adequately protects public health, welfare, and the environment. Approximately seventy percent of the contaminated sites in the County are discovered by hazardous material specialists while overseeing the abandonment of underground storage tanks. The remaining thirty percent of site mitigation activities are initiated as a result of complaints, inspections, tank tightness tests, and emergency response procedures. These sites include leaking drums, leaking underground tanks and pipes, and chemical spills.

Once a potential site of hazardous waste contamination has been discovered, an evaluation to determine the extent of contamination at the site and information sufficient to identify the most appropriate response, are necessary. The following procedures can generally be employed to effectively plan and assess mitigation at contaminated sites.

A. Initial Investigation

Recent deadlines in underground storage tank regulations and increased awareness of the potential problems have resulted in a tremendous increase in the number of tanks being removed or replaced. Routine inspections during tank removal account for the discovery of many contaminated sites. For this reason, a high percentage of the known contaminated sites in the County are related to leaking underground storage tanks. Regular underground storage tank inspections, which are performed every three years, and hazardous waste generator inspections, which are performed annually, also account for the discovery of contaminated sites. Other sites are investigated as a result of complaints or emergency spill responses.

B. Site Assessment and Characterization

If a site is suspected of contamination, an assessment is performed. All available data is collected and reviewed for a given site to evaluate the source and nature of the hazardous substance present and determine if the responsible party can be identified. The site is also inspected to determine the extent of the problem and to gather the data needed to set priorities. Emphasis is placed on contamination pathways that affect human health. A typical site inspection involves sampling, surveying, monitoring, examination, and other field activities. It may also include hydro-geological and geological assessments.

C. Remedial Action Proposal

This phase of site assessment and mitigation consists of collecting and analyzing the data necessary to justify remedial action and support development of alternatives. The scope of

investigation varies depending on which of the three types of remedial action (initial remedial, source control, and off-site, as described in section E) is involved. Typically remedial investigations involve a sequence of activities such as: visiting the site, defining the boundary conditions and preparing a site map, studies of the waste, hydro-geologic conditions, soils, sediments, groundwater, surface water, and air quality and preliminary identification of appropriate remedial technology.

The remedial investigation activities are then taken into account, and a remedial action proposal is made. If groundwater contamination is suspected a plan is also submitted to the Regional Water Quality Control Board (RWQCB). This proposal includes objectives, technologies and methods for cleanup at the site, as well as, non-cleanup alternatives. Alternative technologies and methods are considered with regard to cost, effects on health, the environment, and technical feasibility.

D. Evaluation

An evaluation of proposed cleanup activities is performed. In selecting the remedial alternative, the balance between the need to protect public health, welfare, and the environment and the availability of fund monies is considered.

E. Public Notification

Once a contaminated site has been identified, reports are filed with the local Health Officer. Public notification of new contaminated sites is achieved by using Proposition 65 public information procedures. A recording is made on a daily basis which provides reports for the public and media about newly discovered contaminated sites and emergency spill responses. The public may also acquire information by contacting the Santa Barbara County Environmental Health Division (EHD). Public records may be viewed with written request. A maximum of ten days are allowed for response from the County agency.

The Site Mitigation List is the monthly list that provides information about contaminated sites. Information includes site location, nature of contamination, discovery date, investigator, and status. This list is circulated to the Air Pollution Control District (APCD), RWQCB, DOHS, Resource Management Department, cities, and all hazardous materials staff of EHD. The public may also access this information, although it is generally used for site mitigation and land use purposes.

F. Remediation

Various methods exist for the cleanup of hazardous waste sites. Remedial action alternatives include: offsite treatment and disposal to an appropriate landfill, onsite treatment, and in-situ physical containment. Offsite disposal has been the most common method employed. Onsite treatment is also used and is becoming more common as technologies improve. In-situ containment is rarely used.

1. Off-Site Treatment and Disposal

Off-site treatment involves the removal of all hazardous waste, including contaminated soils, to an off-site facility, either for secure containment or for treatment. The actions to be taken consist of one or more of the preceding alternatives and will depend upon the characteristics of the site, its soil, geology and hydrology, the type of waste, their toxicity and degree of decomposition, and the threat to public health and the environment.

2. On-Site Treatment

- a. Aeration: Aeration involves the use of Visqueen heavy plastic for containment of the soil. Partial exposure allows the contaminant to volatilize into the air. The rate of aeration is set depending on the concentration of the contaminant and controlled by the area of soil exposed. The soil is aerated until chemical contamination levels are below action levels. The soil should be covered during rain and wind to prevent fugitive emissions and run-off water. Vapor extraction is a similar process to aeration, but uses a carbon filter to recover vapors. Aeration and vapor extraction are effective primarily for highly volatile contaminants such as gasoline.
- b. Soil Flushing: The soil flushing process consists of a series of shallow well points that are used to collect seepage subsequent to flooding the contaminated area. This process is most effective when the contaminants are readily soluble in water.
- c. Microbial Inoculations: The microbial inoculation process consists of seeding the soil in the contaminated area with a microbial population capable of metabolizing the contaminant.
- d. Leachate Control System: Leachate control systems are applicable to control of surface seeps and seepage of leachate to groundwater. Leachate collection systems consist of a series of drains which intercept the leachate and channel it to a sump, wetwell, treatment system, or appropriate surface discharge point.
- e. Groundwater Flushing/Airstripping: Groundwater flushing involves the removal of groundwater by pump. The water is then stripped of hydrocarbons using a carbon filter unit. Once the water is free of contamination it is re-injected into the groundwater aquifer.

3. In-situ Physical Containment

In-situ containment of hazardous waste is a method of isolating surface and subsurface areas that have been contaminated from the surrounding environment. In-situ containment employs one or more of the following methods.

- a. Surface Run-off: Surface run-off control measures are implemented to divert water from entering the hazardous waste site, prevent drainage from entering the site, and to receive drainage from the site. Two types of control techniques may be considered. The first involves the use of drainage diversion channels. Surface run-off is diverted by constructing earth berms and excavating channels to direct run-off to natural drainage ways downslope of the contaminated site. Channels may be constructed upslope to divert the run-off from the site and to divert drainage away from the site. Surface stabilization is also an effective tool for in-situ physical containment. Stabilization of the surface soil will not prevent run-off, but it will control run-off velocities, thereby minimizing erosion of the cover material.
- b. Impermeable Barriers: Impermeable barriers can be constructed at the site to prevent the lateral migration of waste from a disposal site and prohibit the movement of groundwater into the site. Impermeable barriers may be constructed of any material that will block the lateral migration of water. Barriers should extend to an impermeable layer at a depth below the waste trench to prevent vertical migration of wastes or groundwater.
- c. Surface Sealing: Surface sealing involves the construction of an umbrella cap or seal on the contaminated site to prevent water infiltration and minimize migration of contamination. Ash, bituminous concrete, and asphalt/tar materials may be used for the construction of caps and seals.

G. Finalization

A contaminated site is considered mitigated once clean-up is complete and the responsible party can demonstrate that the previously identified contamination has been alleviated. This is done by taking confirmatory samples of the soil and groundwater. These samples must indicate levels of contamination at acceptable standards established by the Health Officer and the RWQCB. A site that complies with these standards is considered mitigated. If there are any new discoveries of hazardous waste contamination, regardless of the age or source of contamination, the responsible party must remediate the contaminated site.

10.3.2. Site Mitigation in Santa Barbara County

A. Leaking Underground Storage Tanks

Approximately seventy-five percent of the contaminated sites in Santa Barbara County are due to leaking underground storage tanks. Ninety percent of these are gasoline tanks, while the remaining ten percent are used for the storage of waste oil, solvents, and other miscellaneous hazardous materials. Most of these leaking tanks are discovered during tank abandonments that hazardous materials specialists oversee as a part of the Underground Tank Program. Once a leaking tank is discovered, a site assessment for soil and water contamination is required. South Santa Barbara County has a shallow groundwater table which results in a higher percentage of leaking tanks due to water related corrosion, so the concern for groundwater contamination in this area is high. The RWQCB is notified in

cases of suspected groundwater contamination, and monitoring wells may be required. Contaminated sites are also reported to DOHS and the property owner.

The cleanup methods usually employed for leaking underground storage tanks are offsite disposal to an appropriate landfill or onsite soil aeration and vapor extraction. For non-fuel tanks a cleanup plan must be approved by DOHS. The owner is responsible for the cost of cleanup in most cases. Onsite aeration or vapor extraction treatment for fuel contaminated soils are usually issued a variance from DOHS permit requirements. The treatment procedures must be approved by EHD and in some cases the APCD or the RWQCB.

B. State Superfund Sites/State Bond Expenditure

Cal Trans: The Cal Trans State Superfund project consists of contaminated sites bordering the 101 freeway in the city of Santa Barbara. Most of the site is contaminated as a result of leaking underground storage tanks. The contamination is mostly hydrocarbon and solvent waste, which in some cases has caused groundwater contamination. Due to pending freeway expansion over the next two years, CalTrans, who purchased the land for freeway expansion, is now responsible for the mitigation of these sites. The remedial action proposals for these sites include the removal of soil, aeration, groundwater flushing and airstripping. Most of the waste is being treated onsite. The RWQCB monitors the groundwater quality at these sites. Environmental Health specialists oversee these activities.

Vandenberg AFB: The Vandenberg Air Force Base State Superfund project consists of approximately forty contaminated sites. These sites have resulted from such activities as dumping, launching, and leaking underground storage tanks. The Vandenberg sites are in the assessment phase and 108 monitoring wells have been installed. The volumes and specific types of waste cannot yet be estimated due to a lack of conclusive information. The RWQCB is working with the Vandenberg Air Force Base on the mitigation of groundwater contamination at these sites.

C. Miscellaneous Sites

Twenty-five to thirty percent of the contaminated sites in the County are due to leaking pipes, leaking drums, chemical spills, and abandoned landfills. Often times, these sites are found during routine inspections or as a result of public complaints. Once a contaminated site is discovered, the Environmental Health Division of the County directs the responsible party to clean up the site. If the responsible party cannot be located or if they refuse, local funds are used to mitigate sites that have cleanup costs less than a few hundred dollars. If cleanup costs exceed a few hundred dollars, the DOHS or the State Office of Emergency Services selects a contractor and pays the costs, mainly through State Superfund monies.

D. Solid Waste Sites

All solid waste disposal sites (active and inactive) are currently being evaluated for site integrity. With the tightening of regulations and concern for the health and safety of citizens, public agencies are re-examining past practices in an effort to prevent or constrain

any potential problems. The threat of potential migration of hazardous contaminants to groundwater supplies, and toxic emissions are the primary concerns related to solid waste sites.

Section 13273 of the California Water Code requires the State Water Resources Control Board to rank all solid waste disposal sites (active and inactive) which may pose a threat to water quality. The rankings are based upon an assessment of the extent of hazardous waste in the solid waste disposal sites and the potential effects these hazardous wastes may have upon water quality. The operators of these sites are to submit a solid waste water quality assessment test report to the appropriate RWQCB. If the information demonstrates that hazardous wastes are migrating into the water, the regional board will notify DOHS and take the appropriate remedial actions.

In addition, Section 41805.5 of the State Health and Safety Code requires those same operators to submit a solid waste assessment test report to the Air Pollution Control District. If the District determines that hazardous wastes were found in the air, the DOHS and the California Waste Management Board are to be notified and the appropriate remedial actions will be undertaken.

Water and air monitoring programs at active and inactive landfills in the County are currently being executed. The monitoring programs are specific to each site and are based on site characteristics such as geology, hydrology, and the amount and types of waste stored at each site. The degree of contamination at these sites has not yet been determined. If monitoring activities indicate contamination at these sites, remediation plans will be proposed.

E. Land Use Issues

Contaminated hazardous waste sites create many land use issues. At present, the County does not have an ordinance which regulates land use on or around contaminated sites. Land use decisions are based on policies of the Comprehensive Plan which are designed to protect the health, welfare, and safety of the community. Existing land use policies have been adapted to meet the concerns stemming from contaminated sites.

For new projects historical use of the site is assessed and the County Site Mitigation List and the State Hazardous Waste and Substances Sites List are reviewed to determine whether there is a possibility of contamination. If contamination, or possible contamination is suspected, a site characterization is required of the applicant. This usually requires sampling, surveying, and monitoring. Environmental Health Division specialists are also consulted. The site characterization and assessment serves to either verify contamination or prove contamination does not exist.

Tenants changing occupancy do not consistently seek land use clearances in Santa Barbara County. This poses a problem in regulating the types of businesses that establish themselves in unsuitable locations. There is a need for centralized data or a process such as business

licenses to address this. The monthly Site Mitigation List and the State Sites List are the only information available to regulatory agencies in making land use decisions. Historical usage is usually only taken into account in cases that require permits.

Deed restrictions have been required for certain land use proposals in industrial or commercial zones. These have been instituted for larger industrial facilities as mitigation measures. The owner or tenant must submit a Hazardous Materials Business Plan, a Hazardous Waste Reduction Plan, provide leases or deed transfers with a disclosure by the owner of the existence of County records for the transferred premises, and upon termination of such occupancy perform an environmental audit.

Recognizing the problems with land use issues, the Board of Supervisors has adopted a policy to discourage development that requires a septic system on industrially and some commercially zoned lands. This policy addresses the concern with the potential impact to groundwater resources which would result from improper disposal of chemicals via septic systems. Thus, it is important to recommend that industrial development be served by public sewers. Any disposal of hazardous waste into public sewers must be approved by EHD and the affected sanitary district.

10.4 GOALS AND POLICIES

Hazardous waste contaminated and abandoned sites can pose a serious threat to the environment as well as to the health of citizens. Problems with such sites include incompatible land use of surrounding areas, potential risks to nearby citizens, and the contamination of natural resources. Goals and policies for the improvement of contaminated site mitigation programs are presented below. Contaminated site mitigation is administered primarily through the County Environmental Health Division, which has jurisdiction in the unincorporated areas and in the cities in the County.

Goals

- 10-1 To protect public health and safety and the environment from risks due to the presence of abandoned or contaminated sites.

Policies

- 10-1 The County and cities should work with other involved agencies to establish a coordinated interagency effort for identification, regulation, mitigation, and notification of contaminated sites.
- 10-2 The County and cities in conjunction with the State Department of Health Services shall encourage onsite treatment and remediation to reduce the transport of hazardous waste from contaminated sites.

Implementation Programs

10-A Contaminated Sites List

Develop procedures to improve access to information about the condition, history, remedial action plans, status of a site, availability of site assessments, and local and state agencies with jurisdiction over contaminated sites. This should include the Site Mitigation List prepared by Environmental Health Division and the Hazardous Waste and Substances Sites List prepared by the State Office of Permit Assistance. The potential for identifying sites on the Resource Management Department LIS computer data base should be evaluated. Procedures for the notification of water districts and private well owners when a contaminated site is identified should also be developed.

10-B Cleanup Activities

1. Develop a program to enhance training of personnel in site assessment and mitigation techniques.
2. Investigate funding possibilities for cleanup activities. This should consider how local agencies can recover full or partial payment from responsible parties for cleanup of contaminated sites. The County should support legislation that defines the responsible party in regard to the assessment and cleanup of contaminated sites, as well as legislation that improves access to state and federal Superfunds to cleanup orphan sites.

10-C Surrounding Land Use

The need for an ordinance which regulates land use on and around a contaminated site should be evaluated. Existing Comprehensive Plan policies should be evaluated, and, if appropriate, new policies developed.

10-D Land Use Applications

Develop procedures to a) ensure that all land use permit applicants check the County Site Mitigation List and the State Hazardous Waste and Substances Sites List, and b) amend land use permit applications so that potential contaminated sites are identified as early as possible.

CHAPTER 11

PUBLIC PARTICIPATION AND EDUCATION

11.1 INTRODUCTION

The goal of the citizen participation effort during the preparation of the Hazardous Waste Management Plan (HWMP) was to develop and implement a program which would incorporate input from the public regarding critical issues in hazardous waste management. AB 2948 stresses the importance of citizen participation as an integral part of the planning process by specifying the minimum size and composition of an Advisory Committee that would serve as a forum for public input during the development of the HWMP. The County's goal throughout plan preparation was to gain input from a cross-section of the citizens in the County, and to ensure that the cities within the County were informed of and involved in the plan development process.

As encouraged by AB 2948, programs were implemented to educate and inform the public about the complex issues of hazardous waste management. The following discussion reviews public participation efforts during the development of the HWMP. The discussion also includes future public participation efforts and the continuous public education process which will be necessary for the successful implementation of the plan.

11.2 ADVISORY COMMITTEE

The public participation requirements in AB 2948 has two components. The first component is the selection of representatives to an Advisory Committee and the identification of tasks that would occur throughout the development of the Hazardous Waste Management Plan. The second component is a description of the make-up and tasks of a local assessment committee which will be formed whenever a new hazardous waste facility project is proposed. The purpose of this requirement is to ensure public involvement at early stages of the project review.

11.2.1 Hazardous Waste Management Plan Advisory Committee

Section 25135.2 of the California Health and Safety Code specifies that an Advisory Committee be formed which would consist of a minimum of four members appointed by the Board of Supervisors. The appointments had to include one representative of industry, one representative of an environmental organization, one representative of the public at large, and the remainder from those persons who would have expertise in various aspects of hazardous waste issues (such as engineering, geology, or water quality). In addition to the appointees of the Board of Supervisors, at least three representatives had to be chosen by the City Selection Committee.

The function of this Advisory Committee is to advise those responsible for the development, review, and approval of the Hazardous Waste Management Plan (e.g. City/County staffs, Mayors, City Council Members, Board of Supervisors) on issues related to the overall

development, content, and future administration of the plan. A second function of the Advisory Committee is to hold informal public meetings and workshops to inform the public and to receive comments about the Hazardous Waste Management Plan during the course of the plan development. In addition to obtaining public input for the plan, this process serves to educate the public about hazardous waste issues.

Santa Barbara County's Hazardous Waste Management Plan Advisory Committee

In response to the mandates of AB 2948, the County initiated the public participation process by soliciting interest in the Advisory Committee from throughout the County. This was done by advertising the formation of the Committee in a notice in local newspapers. Numerous applications were received from the north and south County areas. After review of the applications submitted by interested citizens, the staff forwarded the applications to the Board of Supervisors for review, consideration, and appointments. The Board of Supervisors appointed eleven members and two alternates.

The Advisory Committee consisted of two representatives from environmental organizations, four industry representatives, four members from the public at large, and two members who represent interests unique in the County - Vandenberg Air Force Base (VAFB) and the University of California at Santa Barbara. The representative from VAFB is a non-voting, advisory member of the committee. As specified in the legislation, the City Selection Committee also appointed three members to represent the interests of the cities. These members include: the Mayor of Lompoc, a Planning Commissioner from Carpinteria, and a representative from the City of Santa Barbara. A complete list of the Advisory Committee members is contained in Appendix E.

Advisory Committee Activities

At an initial meeting in July 1987, the committee received workbooks which contained background information on the issue of hazardous waste management, the enabling legislation (AB 2948), and their role in the plan development process. Since this meeting, the Committee has met approximately twice a month during development of the plan and less frequently during public review and finalization. To facilitate public access to the Advisory Committee meetings, the meetings were rotated between north and south Santa Barbara County locations. A complete meeting schedule for the Advisory Committee is contained in Appendix E.

The format and topics covered at the Advisory Committee meetings changed as data became available and the draft plan was developed. Initially the Committee focused on gaining a more in-depth understanding of the issue of hazardous waste, the problems facing industry and the public, the requirements outlined in numerous pieces of legislation at the federal, state and local levels, and the implications of the aforementioned on Santa Barbara County. The Committee also had presentations at their meetings from private industry, the military, and governmental agency representatives on issues regarding hazardous waste management.

In an effort to inform the public on a more informal and direct basis, members of the Advisory Committee have made presentations to various environmental, industrial, and community organizations. To maximize consistency and accuracy of data being presented by members of the Advisory Committee, speakers packets were prepared and made available for use by the Advisory Committee. The packets contained a detailed outline for presentations (which included current data and projections); a form for recording names/addresses of attendees (for use in future mailings); a supply of informational brochures; and other handouts and visual aids.

Public Workshops

The Community Environmental Council, Inc. (CEC), under contract to the County Resource Management Department, conducted a three-part series of public workshops on various aspects of hazardous waste management. The workshops were part of the planning process associated with preparation of a Hazardous Waste Management Plan. The workshop series had a three-fold purpose:

1. To inform the public about the preparation of a Hazardous Waste Management Plan;
2. To provide the public with general information on key issues related to hazardous waste management; and
3. To obtain feedback from the public on hazardous waste issues early in the planning process.

The workshops were in the evenings both in Santa Barbara and in Santa Maria. At each workshop there were handouts for the public and a fact sheet which summarized the presentation given that evening. In addition, those who attended were asked to provide their name and address for entry onto the mailing list and to fill out a short questionnaire. The questionnaire was used to identify concerns from the public regarding hazardous waste management. (A copy of the questionnaire is contained in Appendix E.)

The responses to the questionnaire revealed that the public had different priorities on issues related to facility siting and source reduction. Most felt, however, that the key factors to consider in developing programs or siting facilities were those that concerned potential impacts to the environment.

The first workshop of the series provided the public with an overview of the planning effort the County was undertaking. The public was introduced to general issues related to hazardous waste management and the role and purpose of AB 2948. The presentation also focused on the requirements of AB 2948 for the preparation of a Hazardous Waste Management Plan and the steps the County would take to meet those requirements. Finally, the function and purpose of the Advisory Committee were discussed along with an introduction of the background of the Committee's various members. A handout which contained the names, backgrounds, and the representation (e.g. public, environmental, industry) of the committee members was provided. Last, the importance of public

involvement in the process of preparing and adopting a Hazardous Waste Management Plan was emphasized and the public was given suggestions on becoming involved.

Questions and comments raised at Santa Barbara workshops focused on the need for good advertisement to attract the public, the interrelationships between AB 2948 and AB 2185/2187, and the importance of proper inspection of waste handlers and enforcement of existing regulations. In Santa Maria, the topic of interest was Casmalia Resources and current problems with that facility.

The second week of the series focused on an overview of data on hazardous waste in Santa Barbara County. The workshop attendees were introduced to the need for and importance of data in the planning process. Existing sources of data on waste generation were discussed, as well as the limitations of that data. Based on data available in 1986, some conclusions were presented on the types and quantities of hazardous waste generated in Santa Barbara County and the wastes imported into the County. The second week of workshops attracted a number of small quantity generators who were concerned with the problems they experience in handling and disposing of wastes. These generators ranged from agriculturalists to a circuit board manufacturer. Questions were raised concerning the data and its relationship to needed facilities.

The last week of workshops focused on hazardous waste management techniques, facilities associated with the various techniques, and the siting of those facilities. These topics solicited spirited discussion by members of the public. Some expressed frustration with the lack of facilities for disposing of waste oil. Others argued the wisdom of siting treatment and storage facilities near any urban areas in the County. All parties agreed that source reduction was the answer to the problem but recognized the technology was not available to accomplish 100 percent reduction of hazardous waste and, therefore, the need to site some facilities would be inevitable.

In summary, the workshops provided a perspective for the staff and the Advisory Committee and gave an indication of those issues which would be of most concern during the plan development. The continued operation of Casmalia Resources will be a major concern to the residents in North County. Throughout the County, siting will be a difficult task as the public recognizes the need for facilities but feels that the reality of locating such facilities in their area is not desirable.

11.3 PUBLIC PARTICIPATION AND EDUCATION - HWMP DEVELOPMENT

The Hazardous Waste Management Plan has been prepared by the Resource Management Department in coordination with a number of other County departments. The Resource Management Department staff has been active in the public participation and education effort.

11.3.1 Media Coordination

The media coordination aspect of the program included an initial press conference to inform the public and acquaint the media with the plan development. County officials and media

representatives attended from throughout the County. Background and statistical information on hazardous waste issues, along with information about the Hazardous Waste Management Plan, were included as part of the media package. To encourage further public participation and to increase public awareness of the Hazardous Waste Management Plan, Assemblyman Jack O'Connell read a public service announcement that was distributed to local radio stations. As a result of these efforts, the media in Santa Barbara County have carried numerous stories about hazardous waste management issues and have followed the development of the Hazardous Waste Management Plan.

To facilitate the continued media interest in the plan and to inform the public about meetings of the Advisory Committee, press releases were distributed prior to each Advisory Committee meeting and the public workshops. These press releases were sent to all newspapers, radio, and television stations in the County. Appendix E contains a media list and copies of press releases and newspaper articles which have appeared during the plan development process.

11.3.2 Public Presentations

In addition to the public presentations made by the Advisory Committee, County staff has also made presentations to other public entities and civic organizations. County staff has made presentations regarding the Hazardous Waste Management Plan to the Area Planning Council and their Technical Advisory Committee, the Santa Barbara County Planning Commission, the Southern California Hazardous Waste Management Authority, and at meetings of the League of Women Voters and the Chamber of Commerce.

11.3.3 Brochures

Staff has prepared a brochure which provides an overview of AB 2948 that identifies major hazardous waste issues and encourages public participation in the planning process. This brochure has been distributed by the Advisory Committee members and by staff at their presentations. A second brochure was prepared based on the Draft Hazardous Waste Management Plan. This brochure will be a summary of the components, findings, and recommendations contained in the Draft Plan. These brochures were utilized in library displays, and were available from County staff and the Advisory Committee members.

11.3.4 Mailing List

The HWMP program has an extensive mailing list to which meeting announcements and other public information materials are sent. This contains representatives from state agencies, local agencies, the Advisory Committee, water and sewer districts, and other regulatory agencies and County departments. The mailing list also includes the members of the public who have expressed interest in the HWMP; this part of the list has expanded substantially as a result of public presentations. The mailing list continued to expand throughout the development of the Plan. This mailing list provides the County with a direct line of communication with those interested in the issue of hazardous waste management.

11.3.5 Library Reference Materials

Based on the Draft Hazardous Waste Management Plan (HWMP), reference materials were prepared for the major libraries throughout the County. The reference materials included information on household hazardous waste, waste minimization, product substitution, and information which is industry-specific. Copies of the HWMP and the Environmental Impact Report are available at the public libraries throughout the county.

11.3.6 Participation in the Regional Plan

Staff from the Resource Management Department and the Area Planning Council are participating in the development of the Regional Hazardous Waste Management Plan. Staff members attend regular meetings of the Southern California Hazardous Waste Management Authority and provide input and information specific to Santa Barbara County. The County staff members will assist in the preparation of the numerous components of the Regional Plan.

11.3.7 State Department of Health Services Support

Representatives from the State Department of Health Services (DOHS) have provided support to the County staff during the development of the plan. A staff representative from DOHS has attended the Advisory Committee meetings, and a representative from the Alternative Technology Section made a presentation at an advisory meeting. The DOHS has provided a variety of publications and informational pamphlets, some of which are available as reference materials at local libraries.

11.4 PUBLIC PARTICIPATION AND EDUCATION -- HWMP IMPLEMENTATION

Increased public awareness and education about the issues and problems of hazardous wastes are critical to the successful implementation of this plan. Only through increased public awareness will the County adequately identify the problems, and subsequently, the solutions to reducing the volumes of hazardous wastes which are a by-product of our current lifestyle. Education is an integral part of many aspects of this plan. Education must occur at large businesses, at small business, in the home, and in the schools.

To have an effective program, the public must participate throughout the planning process. The following section outlines the approach the County will take to educate and involve the public and encourage future participation in solving the problems of hazardous waste.

11.4.1 Local Assessment Committees

State legislation, in Section 25199(3) of the Health and Safety Code, recognizes that the present procedures for approving hazardous waste facilities do not provide meaningful opportunities for public involvement, and the process lacks a viable mechanism for including public concerns and comments if they are obtained.

Recognizing this problem, AB 2948 requires local jurisdictions to form a seven-member Local Assessment Committee after a Notice of Intent (NOI) to file an application for any new hazardous waste facility is submitted by a project applicant. The make up of the Local Assessment Committee (LAC) is to include the following: three representatives of the community at large, two representatives of environmental or public interest groups, and two representatives of affected businesses or industries.

AB 2948 charges these Local Assessment Committees with the following tasks or responsibilities:

1. Negotiate with the project proponent on details of the proposed hazardous waste facility;
2. Represent the interests of the residents of the affected community and adjacent communities;
3. Receive and expend technical assistance grants monies;
4. Adopt rules and procedures necessary to perform its function; and
5. Advise local decision-making bodies of the terms, provisions and conditions of the project which have been negotiated with the project proponents.

Although current members of the Hazardous Waste Management Plan Advisory Committee might be appointed to serve on a Local Assessment Committee, the legislation specifically identifies and separates the roles of these two types of committees. AB 2948 outlines the life span of each local assessment committee -- they will serve until a proposed project is approved or rejected. Each new project application will require the formation of a new Local Assessment Committee.

11.4.2 Public Awareness Programs

Throughout this plan there have been programs identified to educate and inform the public about hazardous waste management. Public awareness programs will be developed to accomplish this goal for the three major groups which produce hazardous waste: large-quantity generators, small-quantity generators, and households. The programs will be consistent with the goals and policies identified throughout the plan.

11.4.3 Public Education and the Schools

For long-term solutions to the problems of hazardous wastes, education about waste minimization and proper waste management must begin early in the development and education process. Educational campaigns are an ongoing process -- one only has to look at the issues of forest fire prevention and water conservation to realize the magnitude of this endeavor. The initial thrust of the program would be the development of a curriculum package for use in the schools. This should be done in conjunction with the State Department of Education and the local school districts. There are other miscellaneous

educational tools which could accompany the curriculum package. A character, such as Woodsy Owl or Smokey the Bear, could be developed to incorporate a humorous entertainment element into the learning process. School assembly programs, which also educate and entertain, could be used to emphasize hazardous waste issues.

11.4.4 Public Information and Education Tools

The tools identified in this Plan to increase public awareness and participation in the development of the Hazardous Waste Management Plan should continue. Press releases, informational brochures, public service announcements, and library displays are all proven effective methods for informing the public. Informational seminars for new businesses could occur throughout the year. Providing industry with current information on the latest technologies for hazardous waste minimization could be coordinated through the various enforcement entities in the County. The public education process will, by necessity, be accomplished through public and private efforts, and will be an evolving process over a long period of time.

11.5 GOALS AND POLICIES

Public participation and education are key elements for effective management of hazardous wastes. An Advisory Committee was established to provide public input from different sectors of the community into development of the HWMP. Similarly, a Local Assessment Committee (LAC) will be established to provide public input into the permitting process in the event a facility is proposed. In addition, educational programs should be developed and targeted to large quantity generators, small quantity generators, households, and the general public. The following goals and policies recommend programs for continued public involvement.

Goal

- 11-1 To ensure continued public education and participation in all aspects of hazardous waste planning.

Policy

- 11-1 The County and cities should develop a public education program on the proper use and disposal of hazardous wastes including methods for reducing the amount of hazardous wastes generated in the County.

Implementation Programs

11-A Public Education

Public education programs should address all aspects of hazardous waste management including but not limited to waste minimization, storage, transportation,

and infectious wastes. A periodic review of the public educational program should be conducted to make sure that the critical issues facing the citizens of the County are being addressed.

The program should consist of a public awareness component, educational materials, and additional components such as library displays, and brochures. The program could be developed from the efforts undertaken in the preparation of the HWMP and CEC's education program on household hazardous wastes. More detail on the suggested components is presented below.

Brochure - Develop brochures on how the public can be involved in hazardous waste management, the types and amounts of wastes generated in the County, and perhaps, a summary of major issues identified in the HWMP.

Information Resources - Establish a collection of materials on hazardous waste management issues at local libraries.

Public Schools - Work with local schools and the State Department of Education on an early awareness program. This program would focus on developing a curriculum package about hazardous waste issues and effective management practices.

Public Awareness - Provide broad coverage of hazardous waste issues by involving the media when significant events occur. Also, presentations to community interest groups on a periodic basis should be done. This effort could be combined with the duties of the Health Educator recommended in the waste minimization chapter.

11-B Coordination of Educational Programs

Develop a mechanism for coordinating education programs for large quantity generators, small quantity generators, and the general public. This program would require the identification of any overlap between the different areas and would require targeting resources to the most needed groups.

CHAPTER 12

INFECTIOUS WASTE

12.1 INTRODUCTION

Recent publicity of medical waste disposal problems in other states has increased the attention of the public and regulators to the issues surrounding infectious waste. In California, infectious waste has been classified as a hazardous waste since 1984. Infectious waste differs from most other hazardous wastes in that it is hazardous for a relatively short time and usually requires a living host or specific substrate to survive. For this reason, infectious waste is addressed separately and is subject to specific requirements for infectious waste handling, storage, treatment, and disposal.

Infectious waste includes any of the following types of waste:

1. Laboratory wastes, including etiologic* agents which could pose a substantial threat to health due to virulence;
2. Pathologic specimens, including human and animal tissues, blood elements, excreta, and secretions which contain etiologic agents;
3. Surgical specimens, including human or animal parts and tissues removed surgically or at autopsy and disposable agents of infection;
4. Equipment, instruments, utensils, and other disposable materials which could transmit disease from patients or animals that have been isolated because of suspected or diagnosed communicable disease;
5. Human dialysis waste, materials including arterial lines and dialyzate membranes;
6. Carcasses of animals infected or suspected to be infected with etiologic agents; and
7. Any other material which could present a danger of infection because it is contaminated with an etiologic agent, e.g. chemotherapy waste.

This chapter discusses legislation which addresses the management of infectious waste, the existing infectious waste program in Santa Barbara County, a summary of current policies, and recommended policies and implementation measures to improve the program.

* As used in this section, "etiologic" is defined as any type of micro-organism, parasite, or virus which causes, or significantly contributes to the cause of increased morbidity or mortality of human beings.

12.2 LEGISLATION AND REQUIREMENTS

12.2.1 State Regulations

Before January 1, 1984, infectious waste regulations were covered by various sections of Title 22 of the California Code of Regulations (previously the California Administrative Code). This has been amended so that infectious waste is now addressed in a separate section with regulations specific to infectious waste generators. New sections of Title 22 reclassify infectious waste as hazardous waste as defined in Chapter 6.5 of the California Health and Safety Code.

Article 13, Sections 66835-66865 of Title 22 of the California Code of Regulations addresses the handling, storage, treatment and disposal requirements for infectious waste. Significant components of infectious waste regulations addressed by Article 13 include:

1. Producers: All regulations apply to any producer of more than 100 kilograms (220 pounds) of infectious waste per month, and any producer, regardless of quantity, which is a licensed primary care clinic (includes community care clinics, free clinics, employee clinics, surgical clinics, chronic dialysis clinics, and rehabilitation clinics), a general acute care hospital, acute psychiatric hospital, skilled nursing facility, intermediate care facility, or intermediate care facility for the developmentally disabled.

Regulations regarding the disposal of infectious needles and cultures, and certain human remains apply to any producer of these wastes, regardless of quantity or type of facility.

2. Haulers: Infectious waste must be transported by a hazardous waste hauler that is registered with the State Hazardous Waste Management Board. Annual inspections are required for vehicles registered as infectious waste haulers. Registration is not required for generators that haul amounts less than 100 kilograms per month of their own waste, but other regulations must be followed.
3. Permits: Hazardous waste facility permits issued by the Department of Health Services (DOHS) are required for offsite facilities for the treatment, storage or disposal of more than 100 kilograms per month of infectious waste. These permits are not required for crematoriums, cemeteries and wastewater treatment facilities. Class III landfills must adhere to an operating plan for the disposal of infectious waste approved by the County's Health Officer. Producers of infectious waste that autoclave or incinerate only their own infectious waste onsite must operate according to procedures specified in the infectious waste regulations but are not required to obtain a hazardous waste facility permit. Methods other than incineration (e.g. autoclaving) must be approved by the local Health Officer.
4. Manifests: Hazardous waste manifests are not required for producers, haulers, or disposal facilities of infectious waste.

5. Inspection/Monitoring: Offsite facilities operating under a hazardous waste facility permit are monitored by the local Health Officer under the mutual agreement with DOHS. Disposal operations conducted at onsite treatment facilities or Class III landfills are also inspected by the local Health Officer upon mutual agreement with DOHS. The local Health Officer is authorized to inspect infectious waste producers and facilities and enforce the infectious waste regulations.

12.2.2 County Ordinance

In order to ensure that infectious waste producers and facilities are in compliance with State regulations, Santa Barbara County adopted Ordinance No. 3504 (Infectious Waste Ordinance), Chapter 18, Article IV of the Santa Barbara County Code. The Infectious Waste Ordinance authorizes the implementation of an infectious waste control program. This program provides for the inspection of infectious waste generators for handling, storage, treatment and disposal practices. Infectious waste generators are required to obtain permits to generate infectious waste which are renewable annually by payment of a permit fee. Environmental Health specialists also inspect offsite treatment and disposal facilities for compliance with state regulations.

12.3 EXISTING PROGRAMS AND POLICIES

12.3.1 General Procedures and Policies

Currently in Santa Barbara County, generators of more than 100 kilograms of infectious waste per month and licensed health care facilities (as identified in section 12.2.1) are required to have infectious waste generator permits operate. In order to ensure that waste is handled properly from the time it is generated to the time it is disposed, infectious waste generators are required to develop an infectious waste management plan. The plan must indicate procedures and policies and the persons responsible for waste handling, storage, and treatment, and must be approved by the local Health Officer. Procedures and policies must be administered in accordance with state regulations and guidelines.

Federal and state laws consider violations of infectious waste legislation to be serious offenses. Some violations may lead to criminal proceedings with penalties of up to \$25,000 a day. The accuracy with which infectious waste management plans are carried out is of the utmost importance. Ultimate legal responsibility for the safe handling, storage, treatment, and disposal of infectious waste is placed on the facility that generates the waste. Subsequent contractors who haul or dispose of the waste are not responsible for improper handling prior to disposal. Therefore, a responsible representative of the facility administration is required to sign and certify that waste is being handled and disposed of according to state regulations.

12.3.2 Guidelines for Handling and Disposal of Infectious Waste

1. Storage

a. Containers

Once a waste has been identified as infectious, it must be separated from all other waste at the point of origin and placed in red, double disposable plastic bags. The bags must be labeled with the words "INFECTIOUS WASTE" or the international biohazard symbol and the word "BIOHAZARD." Bags that contain infectious waste must be securely tied to prevent leakage or expulsion of the waste.

Infectious sharps, such as hypodermic needles, syringes and broken glass, must be contained in rigid, leakproof containers. These containers must also be labeled with the words "INFECTIOUS WASTE" or with the international biohazard symbol and the word "BIOHAZARD."

All red double plastic bags must be enclosed for storage in approved rigid containers such as a plastic drum with a tight-fitting lid. Storage containers must be lined with double red bags while in use. All containers must be labeled with the word "INFECTIOUS WASTE" or the international biohazard symbol and the word "BIOHAZARD." The medical facility from which the waste is generated must be clearly identified on all containers.

Red bags are not to be used for materials previously classed as infectious waste that have been adequately sterilized. Compactors and grinders are not to be used to reduce the volume of infectious waste unless the waste has been previously sterilized and rendered non-infectious. Infectious waste in red double bags or other containers may not be stored in stationary or mobile compactors.

Reusable infectious waste pails, drums, dumpsters or bins are to be used exclusively for containment of infectious waste.

b. Storage Rooms

Infectious waste must be stored in a room at least 25 feet from other wastes. All storage areas for infectious waste must be protected from weather, insects and animals at all times. Storage rooms must be easily cleaned. Walls are to be smooth and washable gloss enamel, glazed ceramic tile or its equivalent with floors of sealed concrete, tile or its equivalent.

All storage areas and enclosures must have locks to ensure protection against tampering or theft. Warning signs, visible from 25 feet must be posted on these areas, these signs must state in red letters "CAUTION-INFECTIOUS WASTE STORAGE AREA-UNAUTHORIZED PERSONS KEEP OUT" and "CUIDADO-ZONA RESIDUOS INFECTADOS-PROHIBIDA LA ENTRADA A PERSONAS NO AUTHORIZADAS."

Infectious waste which is stored at a temperature above 0°C must be treated or disposed of within 4 days. Infectious waste held at or below 0°C may be stored for up to 90 days.

2. Treatment

Infectious waste may be incinerated onsite in a controlled-air, multi-chamber incinerator permitted by DOHS and approved by the Air Pollution Control District (APCD) which provides combustion of the waste to carbon or mineralized ash. All chemotherapy waste is required to be incinerated to carbon or mineralized ash. Facilities that do not have an approved incinerator may transport infectious waste (in accordance with Title 22 transportation regulations) to a DOHS permitted and APCD approved facility for incineration.

Incinerators coupled with cogeneration are being tested at some large hospitals in the State. This method provides considerable energy savings to hospitals, but is costly. This process is subject to air pollution control standards which in some areas may be difficult to meet.

Infectious waste may also be sterilized onsite prior to disposal by placing waste in heat-resistant impervious bags and steam autoclaving the waste at 121° C for 30 minutes. Written operating instructions must be readily available and accessible to all persons operating the autoclave. Written procedures for the operation of the autoclave must include: time, temperature, pressure, type of waste, type of waste containers, indicator organism procedures, permanent record-keeping protocol, and how to use heat-sensitive tape. A log must be maintained of each load of infectious waste autoclaved indicating the date, time, temperature and pressure reached as well as the name of the person who performed the task. Once the waste is sterilized it may be disposed of in a Class III landfill as non-infectious waste.

3. Transportation

Transportation vehicles for infectious waste are subject to regulations set forth by Title 22. These vehicles must be registered with DOHS and regularly inspected by the California Highway Patrol for safety as well as adequate visible identification.

4. Disposal

The Health Officer may provide written approval for methods of disposal other than onsite incineration. Facilities have the option of either transporting infectious waste to a DOHS permitted and APCD approved incinerator, or transporting waste rendered non-infectious by onsite autoclaving to a Class III landfill.

The Health Officer may approve discharge to the sewer system of the following waste types:

- Waste consisting of flows from laboratories, water closets, wash tubs, showers and other sanitary waste required by building codes to be connected to the sewer facility; or
- Wet, organic materials such as kitchen waste from food preparation, used food from serving vessels and similar waste if satisfactorily ground.

12.3.3 The Santa Barbara County Infectious Waste Program

Currently in Santa Barbara County there are 48 permitted hazardous waste generating facilities. These facilities consist of 10 general acute care facilities (hospitals), 12 convalescent hospitals, 24 clinics, and 2 acute psychiatric care facilities.

Large general acute care facilities, such as Santa Barbara Cottage Hospital, incinerate infectious waste onsite. Facilities with onsite incineration capabilities have often provided incineration services to clinics and other small medical facilities in the area. This has been standard practice for some time although under amended state regulations it is not permitted unless the host facility has a treatment, storage, and disposal facility (TSDF) permit from the State Department of Health Services (DOHS), and the waste is transported by a registered hazardous waste hauler if greater than 100 kilograms per month. Since none of the hospitals with incinerator capacity in Santa Barbara County have a TSDF permit, and waste is usually transported by private vehicle, state and local authorities have agreed to allow this practice to continue while alternative procedures are arranged. Enforcement has recently increased, however, and when these regulations are fully enforced small generators requiring incineration will face a sharp increase in disposal costs. Registered hazardous waste haulers have a minimum pick up fee and the waste must be taken out of the County for incineration. Some wastes currently incinerated may have alternative methods of disposal, for example, onsite autoclaving to render noninfectious for subsequent disposal in a Class III landfill. This is the primary disposal method for many permitted generators in the County. Infectious wastes may be accumulated up to 90 days if stored in a freezer at or below 0° C.

Permitted infectious waste generators are regulated similarly to hazardous waste generators in that they are routinely inspected by Environmental Health specialists for proper handling, storage, treatment and disposal practices. Many facilities that generate infectious waste, such as veterinary clinics, doctors' offices, and other small medical facilities are not included in the infectious waste program because they generate less than 100 kilograms per month of infectious waste. It is not known at this time what percentage of infectious waste is generated by unregulated facilities. These generators must comply with disposal standards for infectious sharps and cultures, and recognizable human remains, but are exempt from other infectious waste regulations.

One problem that has been identified within the current program for infectious waste management is the lack of records for tracking the destination of infectious waste. This will become increasingly important as the regulations restricting the use of local incinerators are enforced. Infectious waste generators often have a letter of agreement with a registered hauler but these have been found to be vague and often do not specify the disposal or treatment facility destination. Manifests are not required under state or federal law for infectious waste.

A second problem is the handling of infectious waste by refuse collectors, transfer station personnel, and landfill operators. Even when properly disposed, rigid containers can be crushed, exposing potentially infectious sharps; and double bagging can be ruptured or punctured when moved with other solid waste objects. Only unregulated generators (i.e. those that produce less than 100 kilograms of infectious waste per month and are not a state

licensed health care facility as described in section 12.2.1) are allowed to dispose of infectious waste to a Class III landfill, so any solution to this problem must focus on these smaller generators.

12.4 GOALS AND POLICIES

The proper handling, storage, treatment and disposal of infectious waste is necessary to protect the public health and the environment. Santa Barbara County has developed an infectious waste management program that follows state guidelines to meet these concerns. This program is administered through the County Environmental Health Division which has jurisdiction in the unincorporated areas and the cities in the County. Although infectious waste is classified as a hazardous waste in California, it is not subject to all hazardous waste regulations. Currently, not all generators of infectious waste are regulated and the transportation of infectious waste does not require shipping manifests to record the generator, hauler, and destination of the waste. Goals and policies for the improvement of the infectious waste management program follow.

Goals

- 12-1 To protect public health and safety and the environment from risks due to improper handling of storage, treatment and disposal practices of infectious waste.

Policies

- 12-1 The County should expand the infectious waste management program to ensure the safe and effective management of infectious waste by all generators in the County.

Implementation Programs

12-A Infectious Waste Control Program

1. Amend the Infectious Waste Ordinance to include all generators of infectious waste.
2. Conduct a survey to determine the disposal practices and the amounts of infectious waste produced in the County. Based on this information, develop programs to ensure the safe management of infectious wastes including identifying procedures to eliminate landfilling of infectious waste.
3. Continue efforts to educate hazardous materials response personnel, the public, and generators of infectious waste on proper management practices, including recommended treatment and disposal alternatives.
4. The County and cities should encourage and support state or federal legislation requiring shipping manifests for infectious wastes.

CHAPTER 13

INSPECTION, MONITORING, AND ENFORCEMENT

13.1 INTRODUCTION

Effective programs for inspection, monitoring, and enforcement provide an impetus for regulatory compliance. These three components are essential to the overall management of hazardous waste. Without them, local and state governments can not be assured that waste management practices are carried out in the safest manner. These programs also serve as a means of providing on-going regulatory information to generators.

The Tanner Bill (AB 2948) specifies that "additional local programs which the county determines to be necessary to provide for the proper management of hazardous wastes produced in the county" may be included in the plan. The discussion of inspection, monitoring, and enforcement is one of these optional elements. The Guidelines identify the issues to be addressed in the discussion of inspection, monitoring, and enforcement. The issues include an identification of existing programs, a discussion of the adequacy of existing efforts to manage additional facilities, and a discussion of the ability to provide technical assistance. Some reference to the allocation of resources is also specified.

13.2 EXISTING PROGRAMS

The County has ongoing programs for inspection, monitoring, and enforcement of hazardous waste generators and facilities in the County. A detailed discussion of the programs in the County are provided in Appendix A. Because the scope of the HWMP is limited to hazardous waste management, programs dealing with hazardous materials will be only briefly mentioned.

Inspection

The Environmental Health Division (EHD) of the County has a major role in hazardous waste management. They administer the hazardous waste generator program which is a comprehensive program that provides for inspection, monitoring, and the issuance of permits for hazardous waste generators. The EHD has a memorandum of understanding (MOU) with the Department of Health Services which details the division of responsibility among these two agencies. The Department of Health Services (DOHS) has the authority for the issuance of hazardous waste facility permits and the registration of hazardous waste transporters. The County has the responsibility for the surveillance and enforcement of treatment, storage, or disposal of hazardous waste. The purpose of the MOU is to ensure that the resources of the State and County are used effectively.

Facilities that store and handle hazardous materials are also inspected and monitored by EHD. EHD issues permits for underground storage tanks and oversees the abandonment

and construction of underground tanks. The underground storage tank program is authorized under local, state and federal regulations.

Inspection programs are also conducted for hazardous materials by the Fire Department and the County Agricultural Commissioner. The Fire Department enforces the 1985 Uniform Fire Code. They regulate use of certain hazardous materials and participate in the underground storage tank program. The Agricultural Commissioner regulates pesticide use under provisions of the California Food and Drug Code, the California Code of Regulations, and Santa Barbara County Ordinance 2672.

Monitoring

The County has an established monitoring program at the Casmalia Resources Hazardous Waste Facility. The program includes a semiannual sampling of surface water and agricultural wells around the disposal site; an analysis of the Santa Maria groundwater basin to determine any possible health problems; and geological site assessment. These programs are coordinated through the Environmental Health Division (EHD). The monitoring effort is a multi-agency program. EHD works with the Air Pollution Control District (APCD) to monitor air emissions from Casmalia Resources, and with UCSB on an ecological study on the effects of the facility on the flora and fauna of the surrounding area.

The APCD regulates facilities in regards to the potential for impacts to air quality. APCD works along with the Environmental Health Division, the Air Resources Board, and the Department of Health Service in establishing locations for monitoring air emissions from the Casmalia Resources facility. The data from the emissions study will serve as a assessment of whether air toxins are emitted from the disposal site. Generators of hazardous wastes and proposed commercial facilities would also undergo air monitoring assessments.

Enforcement

The EHD is also involved in the enforcement and reduction of the amount of illegal dumping of hazardous waste. This program is authorized under both federal and state laws. EHD, with the District Attorney, can file charges against any person responsible for the illegal disposal of hazardous waste. If a responsible party for the dumping is identified, they are required to properly clean up the site within a specified time period. If a responsible party is not found, EHD assesses the site, and develops a mitigation plan using local funds if available. The County makes a formal application for State Superfund monies if local funding is unavailable. A monthly site mitigation status report is developed that includes information about the name and location of the problem, the nature of the problem, the discovery date, the investigator, and the status of clean-up activities.

The Air Pollution Control District (APCD) has enforcement authority through AB 1807 (Cal. Health & Safety Code, Chapter 3.5) for air pollutants identified as toxic air contaminants by the Air Resources Board. APCD can charge a penalty fee for violations of rules and regulations, and emission limitations of permit conditions adopted pursuant to AB 1807. To date, approximately 10 substances have been identified as toxic air

contaminants by the Air Resources Board. APCD has additional enforcement authority through various provisions of the Health & Safety Code and district rules and regulations.

13.3 ASSESSMENT AND NEED FOR ADDITIONAL RESOURCES

The purpose of the following discussion is to identify the resources necessary to manage additional facilities or programs in the County. The most critical issues involve the need for additional staff to carry out current legislative requirements, the consolidation of the existing inspection programs, and the need for education and technical assistance. These issues are discussed below.

Staff Needs

The EHD has a significant role in overseeing hazardous waste generators and the Casmalia Resources facility. The EHD hazardous materials specialists perform annual inspections of hazardous waste generators and conduct inspections in response to complaints. As appropriate and feasible, each specialist provides information to the generator about waste reduction methods and management practices. These specialists are also responsible for the enforcement and reduction of illegal dumping. In 1988, the staff included a total of nine field workers for the monitoring of Casmalia Resources, the generator program, the underground tank program, and the implementation of AB 2185. Staff workload is shared between the hazardous materials and hazardous waste programs. APCD also responds to complaints when the hazardous material or waste is an outdoor air pollutant, and provides inspectors on standby status 24 hours per day to respond to complaints associated with Casmalia Resources.

Additional staff will be necessary to address the projected need for next year and to respond to legislative requirements. The EHD has predicted that additional staff positions will be necessary for local implementation of the Superfund Amendment and Re-authorization Act (SARA), implementation of the Risk Management Prevention Program (AB 3777), continued monitoring of underground tanks, continued efforts in the clean up of underground tanks, remediation of abandoned sites, increased work in the generator program, coordination of enforcement, implementation of proposition 65, and the development of a comprehensive data management system.

If hazardous waste facilities are proposed in the county, additional county staff (including staff from APCD, EHD, Resource Management Department, and others) may be necessary to provide input on the development of such a facility, to monitor the facility on a periodic basis, and to ensure compliance of regulatory requirements. Consideration has been given to siting a transfer station on the south coast of the County. The County Public Works Department in concert with the Community Environmental Council Inc. evaluated the feasibility of developing a County run transfer station. The facility would serve small businesses and households. One proposal being considered is to have the County administer the program with some initial funding from the state. There has also been some effort to establish a transfer station in the north county area.

Consolidation of Inspections

Another major concern is the consolidation of inspections and fees. Local generators must undergo inspections by state and local agencies. Numerous inspections by several agencies can disrupt the daily operations of a business, especially in the case of small quantity generators. While the MOU developed between the DOHS and EHD has reduced overlap between the two agencies, consideration should be given to consolidating the inspections of the various departments in the County. This will be difficult because different departments enforce different regulations and procedures and have different methods of scheduling inspections; this can present problems for consolidation. One way to address the issue may be to develop an agreement among the departments which identifies and addresses areas of overlap, and clearly distinguish the responsibilities of the various County departments.

Education and Technical Assistance

Education on proper management of hazardous waste should be provided as part of the inspection and enforcement efforts conducted by all involved agencies. Inadequate education has been identified as a "significant factor in the overall problem of non-compliance" (Hazardous Waste Management Council, 1984). But education can not be expected to solve the entire problem. Generators must regard compliance as a serious responsibility. Thus, the County should make enforcement of violations a priority by assigning permanent staff to this effort.

One of the key concerns expressed by the DOHS is the need to evaluate whether technical assistance could be provided to hazardous waste generators in the County. As part of regular inspection procedures, regulation and waste management information is provided whenever possible by EHD staff. Thus far, no formal program for technical assistance has been developed. The need for such expertise has been identified in the Waste Minimization Chapter (Chapter 4), and the County has recently approved and hired a waste reduction specialist to enhance the efforts of EHD in this area.

13.4 GOALS AND POLICIES

Future County efforts will require a significant amount of resources for the implementation of hazardous waste programs. This will require that the County assess its current programs and determine priorities in regard to the allocation of resources. The following goals and policies are recommended as a means of addressing these concerns.

Goals

- 13-1 To protect the public health and safety and the environment by ensuring that all hazardous waste generators and facilities are operating safely and are in compliance with all appropriate local, state, and federal laws.

Policies

- 13-1 The County shall continue its inspection programs and shall work toward providing technical assistance to generators on an on-going basis.
- 13-2 The County shall provide effective enforcement of appropriate local, state, and federal hazardous waste laws, and shall make reasonable efforts to work with violators in correcting the violation.

Implementation Program

13-A Enforcement Coordination

Develop a program to improve local enforcement of hazardous materials and hazardous waste regulations. This should include an enforcement coordinator position in the Environmental Health Division to work with hazardous materials specialists and the District Attorney.

REFERENCES

CHAPTER 13 - INSPECTION, MONITORING, AND ENFORCEMENT

1. California Department of Health Service, 1987. *Guidelines for the preparation of Hazardous Waste Management Plans.*
2. Hazardous Waste Management Council, 1984. *Hazardous Waste Management Plan - Recommendations of the Hazardous Waste Management Council.*
3. Southern California Hazardous Waste Management Authority, 1987. *Incentives for Increasing Onsite Management of Hazardous Waste.*
4. University of California, Davis, 1987. *Managing Hazardous Waste Produced by Small Quantity Generators.* Prepared in cooperation with the California Senate Office of Research.

CHAPTER 14

ORGANIZATIONAL RESPONSIBILITIES FOR IMPLEMENTATION

14.1 INTRODUCTION

The Hazardous Waste Management Plan (HWMP) presents numerous goals, policies, and implementation programs for the management of hazardous wastes in the County. The recommended programs improve and expand the existing framework for hazardous waste management. This chapter provides a brief discussion of the organizational responsibilities for existing programs, a summary of the programs proposed in this Plan, the organizational responsibilities for the proposed programs, and a schedule for implementation.

Reasonable efforts must be made to implement the programs in order to achieve the goals and policies identified in this Plan. Because staff and financial resources are limited, priorities must be established so that the programs which best meet the needs of the County and the goals of AB 2948 take precedence. In addition, the scope of the programs must continue to be defined to ensure efficient use of resources. These critical elements must be completed with input from the public and industry. The use of advisory committees will be helpful in this effort.

14.2 ORGANIZATIONAL RESPONSIBILITIES FOR EXISTING PROGRAMS

Laws and regulations governing hazardous materials and wastes occur at the federal, state, and local level. Some of these laws are directed specifically to hazardous materials or wastes, and others are general pollution laws. The principal government agencies concerned with hazardous materials and waste are the federal Environmental Protection Agency (EPA), the state Department of Health Services (DOHS), and the Hazardous Materials Section of the County Environmental Health Division (EHD). In addition, a regional program is being developed by the Southern California Hazardous Waste Management Authority. For more information on the federal, state, and local laws governing hazardous materials and hazardous waste, see Appendix A-1.

14.2.1 Federal Responsibilities

Environmental Protection Agency (EPA)

The mandate of the EPA is to control and abate pollution in the areas of air, water, solid waste, pesticides, radiation, and hazardous materials. For air and water quality, the EPA develops standards and regulations and can require state governments to enforce laws and regulations. The EPA has given the responsibility for enforcing federal air quality requirements in California to the State Air Resources Board and water quality requirements to the State Water Resources Control Board. The EPA also works closely with the state DOHS in developing hazardous waste standards and regulations, enforcement, and standards for land disposal of hazardous wastes.

The key laws providing authority to the EPA for hazardous materials regulation are the Resources Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the Toxic Substances Control Act (TSCA). Under RCRA, the EPA works with DOHS to manage hazardous waste with the cradle to grave concept. CERCLA established the federal Superfund program and provides funding for the EPA to clean up abandoned or inactive hazardous waste sites. FIFRA gives the EPA authority over the use of all pesticides. TSCA gives EPA authority to identify and control reasonable risks over otherwise unregulated chemicals. With the exception of some kinds of permitting, federal reporting requirements, and cleanups of major contaminated sites, the EPA has little direct involvement in Santa Barbara County's hazardous waste management activities, but plays an important role through establishing parameters for state regulation.

Department of Transportation (DOT)

The Department of Transportation (DOT) regulates the transportation of hazardous materials, including hazardous waste. The relative federal, state, and local roles for transportation regulations are discussed in Chapter 7.

14.2.2 State Responsibilities

State Department of Health Services (DOHS)

DOHS is the primary state agency regulating hazardous waste. They are responsible for implementing and enforcing provisions of the State Hazardous Waste Control Act (HWCA) through the Toxic Substances Control Division (TSCD). Hazardous waste generation is managed through the hazardous waste manifest system, the hazardous waste facility permitting program, and the regulation of hazardous waste hauling firms. DOHS also administers a funding program for remedial cleanup of hazardous waste sites that meet certain criteria. The state fund for cleanup is known as the state Superfund. Both the state and federal Superfunds are supported by special annual taxes imposed on industries which generate hazardous substances.

Air Resources Board (ARB)

The ARB is charged with coordinating efforts, attain and maintain current air quality standards, and to research causes and solutions to air pollution. The local division of the ARB, the Santa Barbara County Air Pollution Control District (APCD) is responsible for enforcement of air quality laws and regulations in Santa Barbara County.

Water Resources Control Board (SWRCB)

The State Water Board is responsible for water rights and water pollution control. It has primary responsibility for guidelines for underground storage tank regulation and for land disposal of hazardous wastes. Through its regional boards, it issues waste discharge permits, monitors water quality, and takes enforcement action against violators. Santa Barbara County is in the Central Coast Regional Water Quality Control Board (RWQCB) District.

Office of Emergency Services (OES)

The State OES develops and maintains state plans and programs necessary to mitigate the effects of natural, man-made, or war-caused emergencies. OES has responsibility for the coordination of the hazardous materials business plan and area plan provisions of AB 2185/87 (Chapter 6.95 of the Health and Safety Code). OES also has primary responsibility for administration of the federal provisions of Title III of the Superfund Amendments and Re-authorization Act of 1986 (SARA), though procedures for satisfying these requirements have not yet been established.

California Highway Patrol (CHP)

Principally a law enforcement agency, the CHP ensures the safe, convenient, and efficient transportation of people and goods over the California highway system. The CHP responds to highway emergencies involving hazardous materials, inspects and regulates commercial vehicles which carry hazardous materials, and coordinates with other agencies for the enforcement of hazardous waste laws and regulations as they apply to transportation.

14.2.3 The Regional Authority

The Southern California Hazardous Waste Management Authority works on a regional basis to develop the Regional Hazardous Waste Management Plan and programs to facilitate the siting of facilities needed to manage the hazardous wastes generated by its member jurisdictions. A key responsibility of the Authority is to define "Fair Share" principles and provide guidelines for developing intercounty agreements regarding hazardous waste management. It should be noted that while the Authority identifies regional needs and assists in the siting of hazardous waste facilities, actual siting decisions rest with the local governments.

The role of the Authority is important for implementation of the County Hazardous Waste Management Plan because, although the intent of AB 2948 guides each county to take responsibility for hazardous wastes generated within the county, it is not economically feasible or environmentally sound for every county to site every type of facility. The Regional Hazardous Waste Management Plan provides the forum for intercounty agreements and the Fair Share principle. This ensures the burden as well as the benefits of regionally sized facilities are shared between counties under official guidelines. The Fair Share principle as adopted by the Authority is presented in Chapter 2 (Table 2-15).

14.2.4 Santa Barbara County Responsibilities

The Environmental Health Division (EHD) of the Health Care Services Department has primary responsibility for hazardous waste and materials enforcement in Santa Barbara. It is responsible for monitoring the compliance of the County's industry with current hazardous materials and hazardous waste laws, regulations, and ordinances, and respond to individual complaints and incidents. EHD administers the Hazardous Waste Generator Program; the Infectious Waste Control Program; the Underground Tank Program; and the inventories, emergency response plans, and risk management plans required by Chapter 6.95 of the

California Health and Safety Code. Other responsibilities of EHD include reporting incidents in accordance with Proposition 65, investigating complaints, responding to emergencies, and participating in the development of the Hazardous Waste Management Plan.

Other County agencies that have some direct responsibility for hazardous waste management are the Fire Department, Agricultural Commissioner, Office of Disaster Preparedness, Air Pollution Control District, and Resource Management Department. The roles of each of these agencies are discussed in Appendix A-2.

14.3 IMPLEMENTATION PROGRAMS

The proposed implementation programs fall into eight general issue areas:

- Data;
- Siting, permitting, and land use regulations;
- Waste minimization;
- Education;
- Household hazardous waste program;
- Transportation;
- Expansion of existing EHD programs; and
- HWMP coordinator and committees.

Implementation of the proposed programs will require the involvement of several County and city agencies. The primary County agencies are the Environmental Health Division, Resource Management Department, Public Works, and the Office of Disaster Preparedness.

City involvement will be mainly through Planning and Community Development Departments. Specific responsibilities, however, will depend upon which option each city chooses for adoption of the Hazardous Waste Management Program. Under Section 25135.7 of the California Health & Safety code, these options include:

1. Adopt a city hazardous waste management plan containing all the required elements of the County Plan as specified in Section 25135.1 (d) of the California Health and Safety Code;
2. Incorporate the applicable portions of the approved County Plan, by reference, into the city's general plan; or
3. Enact an ordinance which requires that all applicable zoning, subdivision, conditional use permit, and variance decisions are consistent with the portions of the approved County Plan which identify siting criteria for hazardous waste facilities.

Aside from the actual adoption process, the primary issue area for which the cities will be responsible is siting, permitting, and land use regulations. Cities might also participate in the education, household hazardous waste, and transportation programs.

Table 14-1 lists the eight general issue areas, the programs associated with each area, and the agencies likely to be responsible for implementation. Table 14-2 provides more information for each program, including whether it is a new or existing program, the recommended phase of implementation (this is further explained in Section 14.4), an estimate of initial resources needed for implementation, and potential funding sources. The program numbers correspond to the chapter of the HWMP in which each is presented. (These tables are found at the end of this chapter.)

There is a need for coordination of all the programs and agencies. A committee made up of representatives from each County department involved in hazardous waste management should be established to fulfill this function. The purpose of the committee would be to oversee the implementation of the proposed programs, establish priorities, refine the scope of work, and determine the level of effort for each program. In addition, the County committee would be an excellent avenue for discussing the overall activities for hazardous materials and waste management. Hazardous materials and waste laws are changing and expanding rapidly; it is important to share new information and ideas and minimize duplication of efforts. The committee would be an internal committee that would work toward establishing an efficient and effective process for implementing the proposed programs in order to maximize use of resources within the County. This committee could also serve as a liaison between other county committees formed for related issues. A coordinator could be assigned to oversee existing hazardous waste programs within the County, to develop new programs as needed, to assure proper participation by all involved departments, and provide staff support to the County committee. Because of the interdepartmental responsibilities of this position, it is recommended that the coordinator be staffed in the Administrative Office.

A second committee should be established to provide public, industry, and other local agency input to the process. The goal of this committee would be to evaluate the hazardous waste programs based on the needs and concerns of the public, industry, and local agencies. This advisory committee would have a role similar to the Tanner Advisory Committee. The Tanner Advisory Committee was established to provide input on the development of the HWMP. The new advisory committee would be involved in implementing the programs of the Plan. It would have the same structure as the Tanner Committee and would be composed of representatives from environmental groups, industry, cities, and the general public.

14.4 IMPLEMENTATION SCHEDULE

The DOHS Guidelines for the preparation of the HWMP call for inclusion of schedules for both implementation and revision of the HWMP. Both schedules depend upon the time taken for approval and adoption of the HWMP, and are contingent upon program funding.

14.4.1 Implementation Programs

The final Hazardous Waste Management Plan (HWMP) must be approved by a majority of the cities containing a majority of the population of the incorporated areas, and approved by the County Board of Supervisors, prior to submittal to DOHS for approval. This will

involve several public hearings and is expected to take approximately 3 months. Once the Plan has been submitted to the DOHS, they have 6 months to review it. Once approved by DOHS, the County and cities then have 6 months to adopt the approved plan.

In order to approximate a schedule for implementation, the recommended programs have been prioritized into three phases. All of the programs are important for effective application of the goals and policies of the HWMP; they have been prioritized in recognition of limited resources for implementation. Recommended phases for implementation have been broken into three groups:

1. **Highest priority-** Implementation of these programs should begin immediately. Some of these programs have already been initiated. These are crucial elements of effective hazardous waste management and should be implemented without waiting for the formal approval and adoption cycle to be completed.
2. **Recommended year 1-** These programs should be initiated within 1 year of DOHS approval of the Plan. Many of these programs are related tasks which can be grouped and completed together. During this period, the Plan will be adopted by the County and cities, implementation of high priority programs will continue, and some groundwork for the year 2 programs will be accomplished. Some of the year 1 programs will be implemented as part of the adoption process.
3. **Recommended year 2-** Due to limitations of staff and resources, it is unreasonable to expect all programs to be implemented in the first year. The recommended second year programs are not less important than the others but are delayed for one of two reasons: either the program will benefit from information gained during the first year of implementation, or the program currently exists to some degree, and can be improved or expanded only as funding is made available.

Table 14-3 assigns each of the proposed programs to one of these phases. It is important to note that each program may be funded independently and this will influence the proposed schedule. The County, for example, may acquire funding for a program scheduled for year 2 from a source unique to that program, and thus could begin implementation immediately.

14.4.2 Updating and Revising the HWMP

The effectiveness and accuracy of the HWMP should be monitored and evaluated as conditions change and new data are acquired. Future revisions should be adjusted to reflect better data, new laws and regulations, new technologies for waste reduction, treatment, and disposal, and other factors of uncertainty. The goals, policies, and implementation programs should be reviewed and adjusted as necessary. The scope of the Plan may also need to be expanded, for example, to include hazardous materials issues not covered at this time.

The DOHS has recommended a schedule for revising the Plan. They would provide guidelines for revisions similar to those used to prepare this Plan. The recommended schedule follows a three year schedule to correspond with revisions of the State Hazardous Waste Management Plan. The schedule proposed by the DOHS is shown in Table 14-4. Original deadlines for completion of this Plan have been revised to reflect changes in the legislation that have occurred after this tentative schedule was released. The revision schedule is likely to be delayed by 6 to 12 months and will depend on available funding. At this time, no state funding has been identified for revising the HWMP.

14.5 GOALS AND POLICIES

The HWMP evaluates hazardous waste management in Santa Barbara County and recommends numerous goals, policies, and implementation programs to improve the existing framework. Funding and coordination are important to the effective implementation of the HWMP programs and the efficient use of County resources. Continual refinement of the scope and prioritization of the programs is necessary to ensure that critical problems are being addressed in the most efficient manner possible.

Goals

- 14-1 To have a comprehensive, interagency network of programs for hazardous waste management in order to protect the health and welfare of the public, the environment, and the economy of Santa Barbara County.
- 14-2 To maximize the coordination of hazardous waste and hazardous materials programs so as to ensure that the needs of Santa Barbara County are met in the most efficient manner possible.

Policies

- 14-1 The County and cities shall implement the goals, policies, and programs identified in the HWMP to improve hazardous waste management in Santa Barbara County.
- 14-2 The County shall establish a committee(s) to oversee the implementation of the HWMP programs. A staff position should be allocated for a coordinator to oversee all hazardous waste programs in the County, and to work with the HWMP committee(s).

Implementation Programs

14-A Funding

Funding sources for implementation of the HWMP must be identified. Potential sources include Measure A monies (if available), program fees, user fees, state and federal grants, surcharges on solid waste fees, violation fines, and assistance from other affected agencies and districts. The County should seek an override to Proposition 4 appropriations limitation to provide for expansion of hazardous waste

programs. Other potential sources should be investigated. Existing programs and resources should be utilized as much as possible.

14-B HWMP Program Coordinator

The HWMP Program Coordinator would be responsible for overseeing the implementation of HWMP programs and the overall coordination of all hazardous material and waste management programs.

14-C HWMP Program Committees

Two committees are recommended to oversee the implementation of the proposed programs of the plan. One committee should be comprised of County representatives who will oversee the programs, establish program priorities, and determine the scope of work for the programs. A second committee should be established to provide an opportunity for input from the public, industry, and cities regarding all phases of the implementation of the HWMP programs.

TABLE 14-1
RECOMMENDATIONS FOR IMPLEMENTATION OF HAZARDOUS WASTE PROGRAMS

ISSUE AREA	PROGRAM	-----COUNTY DEPARTMENT-----				CITIES
		RMD*	EHD*	PW*	ODP*	
Data	2-A Comprehensive data base	X	X		X	
	5-A SQG data assessment	X	X			
	10-A Contaminated sites list	X	X			X
Siting, permitting, land use regulations	2-B Permitting- generators	X	X			X
	3-A Permitting- offsite facilities	X				X
	3-B Zoning- offsite facilities	X	X			X
	3-C Permitting- onsite and transportable facilities	X	X			X
	4-B Application requirements- waste minimization	X	X			X
	8-A Application requirements- emergency response plans	X	X			X
	9-B Home Occupations	X	X			X
	10-C Land use requirements- contaminated sites	X	X			X
	10-D Application requirements- contaminated sites	X	X			X
Waste minimization	4-A Waste minimization program		X			
Education	5-B SQG education		X			
	6-B Household hazardous waste education		X	X		X
	11-A Public education	X	X			X
	11-B Coordination of education		X			
Household and SQG hazardous waste collection	5-C SQG collection and transfer station	X	X	X		X
	6-A Household collection and transfer station	X	X	X		X
	6-C Household recycling	X	X	X		
	6-D Waste composition study			X		
Transportation risk management	7-A Transportation risk management guidelines	X	X	X	X	X
Expansion of existing EHD programs	9-A Storage inspections		X			
	10-B Cleanup activities		X			
	12-A Infectious waste program		X			
	13-A Enforcement coordination		X			
HWMP coordinator and committees	14-A Implementation funding	X	X	X	X	X
	14-B HWMP program coordinator		Administrative Office			
	14-C HWMP program committees	X	X	X	X	X

* RMD - Resource Management Department
EHD - Environmental Health Division

PW - Public Works Department
ODP - Office of Disaster Preparedness

TABLE 14-2

IMPLEMENTATION PROGRAM SUMMARY

IMPLEMENTATION PROGRAM	RESPONSIBLE AGENCIES (1)	NEW OR EXISTING PROGRAM	IMPLEMENTATION PHASE (3)	RESOURCES NEEDED	POTENTIAL FUNDING SOURCES
2-A Data Management System	EHD, RMD Data Services	Expansion of existing program	Highest priority	Full time data management position in EHD; interagency coordination	EHD program fees, Measure A (4)
2-B Permit process guidelines for haz waste generators	RMD/ City Planning, EHD	Expansion of existing procedures	Recommended yr1	Staff to develop procedures and amendments; additional land use staff in EHD to review projects	County/City general funds
3-A Permit process guidelines for offsite haz waste facilities	RMD/ City Planning	Expansion of existing procedures	Highest priority	See program 2-B	County/City general funds
3-B Zoning amendments for offsite haz waste facilities	RMD/ City Planning, EHD	New zoning districts and regulations	High priority	Staff to develop amendments and regulations	County/City general funds
3-C Provisions for onsite haz waste facilities	RMD/ City Planning, EHD	Expansion of existing procedures	Recommended yr1	Staff to develop procedures and amendments	County/City general funds
4-A Waste minimization program	EHD	New program (has been initiated)	Highest priority	Specialist in EHD (funded); support resources	Measure A (4)
4-B Land use permits-waste minimization	RMD/ City Planning EHD	New program based on existing requirements	Recommended yr1	RMD staff to develop procedures and amendments; EHD staff to develop guidelines and review plans	Land use fees, Hazardous Waste Generator fees
5-A Small quantity generator data assessment	EHD, RMD	Expansion of existing program, see program 2-A	Recommended yr2	See program 2-A	See program 2-A
5-B Small quantity generator education	EHD	New program, see program 11-A	Highest priority	Health Educator position in EHD (funded); support resources; see program 11-A	Measure A (4), Hazardous Waste Generator fees
5-C Transfer station and Collection Services for Small Quantity Generators	PW, RMD, EHD, possibly cities (2)	Continuation of existing collection services, new transfer station	Highest priority	RMD, PW, and EHD staff to evaluate expansion of program; PW apply for permit and construct transfer station; RMD issue permit for transfer station; EHD technical assistance and monitoring of transfer station	General fund, Measure A (4), Solid Waste Enterprise Fund, solid waste surcharge, user fees, state or federal grants, assistance from other affected agencies and districts

(1) EHD - Environmental Health Division, County Health Care Services Department. EHD has jurisdiction in incorporated and unincorporated areas.
RMD - County Resource Management Department. RMD has land use and planning jurisdiction in unincorporated areas, City Planning Departments in incorporated areas.

(2) Household and SQG collection services are funded by the County through fiscal year 1988-89.

(3) Prioritization of programs is discussed in section 14.4.1.

(4) Measure A - The County tax collected from Casmalia Resources. These monies are allocated to toxics related programs in the county and are contingent upon the status of the facility. This should not be depended upon for continuous program funding.

TABLE 14-2 (continued)
IMPLEMENTATION PROGRAM SUMMARY

IMPLEMENTATION PROGRAM	RESPONSIBLE AGENCIES (1)	NEW OR EXISTING PROGRAM	IMPLEMENTATION PHASE	RESOURCES NEEDED	POTENTIAL FUNDING SOURCES
6-A Household hazardous waste collection services	PW, RMD, EHD, possibly cities (2)	Continuation of existing collection services, new transfer station, see program 5-C	Highest priority	See program 5-C	See program 5-C
6-B Household hazardous waste education	PW, EHD, cities	Continuation and expansion of existing program	Recommended yr2	Staff to develop, collect, and distribute educational materials; see programs 5-C and 11-A	See programs 5-C and 11-A
6-C Household hazardous waste recycling	PW, EHD, RMD	Expansion of existing program	Recommended yr2	Staff to evaluate and implementing feasible recycling alternatives	See program 5-C
6-E Waste composition study	PW	Existing program	Recommended yr2	Funded	Solid Waste fund
7-A Transportation risk management guidelines	RMD, EHD, PW, ODP, Cities, CalTrans, CHP	New program	Recommended yr2	Scope of program yet to be determined	Measure A (3), general fund
8-A Land use permits-Emergency response plans	EHD, RMD/City Planning	New program based on existing requirements	Recommended yr1	Staff to develop procedures	AB 2185 fees, general fund
9-A Hazardous waste/materials storage inspections	EHD	Existing program	Recommended yr1	Staff to evaluate need for expansion and consolidation	EHD program fees
9-B Home occupation guidelines and regulations	RMD/ City Planning, EHD	New program	Recommended yr2	Staff to develop guidelines, procedures, and amendments	County/City general funds
10-A Contaminated sites list	EHD, RMD/City Planning	Expansion of existing program	Recommended yr1	EHD to maintain additional information; interagency coordination	General fund
10-B Contaminated sites cleanup activities	EHD	Expansion of existing program	Recommended yr1	Enhanced training; staff to investigate funding sources	EHD program fees, Measure A (3), general fund

- (1) EHD - Environmental Health Division, County Health Care Services Department. EHD has jurisdiction in incorporated and unincorporated areas.
RMD - County Resource Management Department. RMD has land use and planning jurisdiction in unincorporated areas, City Planning Departments in incorporated areas.
PW - County Public Works Department
ODP - County Office of Disaster Preparedness
CHP - California Highway Patrol

- (2) Household and SQG collection services are funded by the County through fiscal year 1988-89.

- (3) Measure A - The County tax collected from Casmalia Resources. These monies are allocated to toxics related programs in the county and are contingent upon the status of the facility. This should not be depended upon for continuous program funding.

TABLE 14-2 (continued)
IMPLEMENTATION PROGRAM SUMMARY

IMPLEMENTATION PROGRAM	RESPONSIBLE AGENCIES (1)	NEW OR EXISTING PROGRAM	IMPLEMENTATION PHASE	RESOURCES NEEDED	POTENTIAL FUNDING SOURCES
10-C Land use regulations on and around contaminated sites	RMD/ City Planning, EHD	New program	Recommended yr1	Staff to evaluate need and develop program if necessary	County/City general funds
10-D Procedures to identify contaminated sites in the land use process	RMD/ City Planning, EHD	New program (review of state list mandated)	Recommended yr1	Staff to develop procedures; see also program 10-A	County/City general funds
11-A Public education program	EHD, RMD, possibly cities	New program (has been initiated)	Highest priority	Interagency staff to collect, develop, and distribute educational materials; (EHD Health Educator funded)	Measure A (2), general fund
11-B Coordination of education programs	EHD	New program	Recommended yr2	See program 11-A	See program 11-A
12-A Infectious waste program	EHD	Expansion of existing program	Recommended yr2	Staff to survey generators, amend ordinance and expand program as necessary	EHD infectious waste generator fees
13-A Enforcement Coordination	EHD	Expansion of existing programs	Highest priority	Full time Enforcement Coordinator and support resources in EHD	Measure A (2), EHD program fees, violation fines
14-A Implementation funding	Interagency	New program	Highest priority	Interagency efforts to identify and obtain funds for implementation	Measure A (2), general fund
14-B HWMP Program Coordinator	Administrative Office	New position	Recommended yr1	Coordinator position to oversee implementation of HWMP and facilitate interagency cooperation	Measure A (2), general fund
14-C HWMP program committees	Interagency	New program	Recommended yr1	Representatives from each agency involved in haz waste management for internal committee; staff support for public advisory committee	Measure A (2), general fund

- (1) EHD - Environmental Health Division, County Health Care Services Department. EHD has jurisdiction in incorporated and unincorporated areas. RMD - County Resource Management Department. RMD has land use and planning jurisdiction in unincorporated areas, City Planning Departments in incorporated areas.
- (2) Measure A - The County tax collected from Casmalia Resources. These monies are allocated to toxics related programs in the county and are contingent upon the status of the facility. This should not be depended upon for continuous program funding.

TABLE 14-3

RECOMMENDED PHASES FOR IMPLEMENTATION OF HAZARDOUS WASTE PROGRAMS

HIGHEST PRIORITY PROGRAMS (1)	FIRST YEAR IMPLEMENTATION (2)	SECOND YEAR IMPLEMENTATION (3)
2-A Data Management System	3-C Provisions for onsite facilities	2-B Permit process guidelines for hazardous waste generators
3-A Permit process guidelines for offsite facilities	5-A Small quantity generator data assessment	6-B Household education
3-B Zoning amendments for offsite hazardous waste facilities	5-B Small quantity generator education	6-C Household recycling program
4-A Waste minimization program	4-B Land use permits-waste minimization	6-E Waste composition study
5-C Transfer station and collection services for small quantity generators	8-A Land use permits-emergency response plans	7-A Transportation risk management guidelines
6-A Transfer station and collection services for households	9-A Storage inspections	9-B Home Occupations
11-A Public education	10-A Contaminated sites list	11-B Coordination of education programs
13-A Enforcement coordination	10-B Contaminated sites cleanup activities	12-A Infectious waste program
14-A Implementation funding	10-C Land use regulations-contaminated sites	
	10-D Land use permit applications-contaminated sites lists	
	14-B HWMP Coordinator	
	14-C HWMP Committees	

(1) Implementation of these programs should begin immediately. Some have already been initiated. These are crucial elements of effective hazardous waste management and should not be delayed during formal approval and adoption of the HWMP.

(2) These programs should be initiated within one year of DOHS approval of the HWMP.

(3) These programs should be initiated during the second year of implementation, or sooner if funding becomes available.

TABLE 14-4

PROPOSED SCHEDULE FOR UPDATING THE HWMP
(From the DOHS Guidelines for the Preparation of the HWMP)

	CURRENT HWMP (1)	SUGGESTED FIRST REVISION	SUGGESTED SECOND REVISION
Guidelines issued by DOHS	6/30/87	12/31/89	12/31/92
Draft Plan due to DOHS	3/31/88	9/30/90	9/30/93
Draft Plan approved by DOHS	6/30/88	12/31/90	12/31/93
Final Plan due to DOHS	2/1/89	9/30/91	9/30/94
Final Plan approved by DOHS	7/31/89	12/31/91	12/31/95
Final State Plan issued	12/30/89	11/30/92	11/30/95

(1) These are the deadlines as they have been modified by legislation that passed after release of the Guidelines.

GLOSSARY

GLOSSARY

Alternative Technology: Defined by the Department of Health Services to mean the application of technology to the reduction of waste generation, promotion of recycling, and alternatives to land disposal of hazardous waste.

APCD: Air Pollution Control District. The regional agency responsible for regulating local air quality.

Aqueous: Of, relating to, or resembling water.

Aqueous Treatment: Treatment of water contaminated with hazardous materials. Consists of removing heavy metals, neutralizing acid or basic solutions, removing organic chemicals, and otherwise reducing levels of contamination in water sufficiently to allow the treated water to be discharged into sewers or other water ways in accordance with discharge permit requirements. Residual sludges require disposal after stabilization.

Aquifer: A porous geologic formation capable of yielding a significant amount of groundwater to wells or springs.

Area Plan: The county-wide plan for response to emergencies involving hazardous materials or hazardous wastes. This plan was prepared by the County Office of Disaster Preparedness in conjunction with other agencies under the authority of AB 2185/2187 (1985/86), the Hazardous Materials Release Response Plans and Inventory Law.

Autoclave: A method of sterilization using super-heated steam under pressure; used for treatment of infectious waste.

Biological Treatment: Treatment processes utilizing living micro-organisms to decompose organic hazardous wastes into simpler organic or inorganic substances. The five principal techniques include activated sludge, aerated lagoons, trickling filters, waste stabilization ponds, and anaerobic digestion.

Buffer Zone: An area of land that surrounds a hazardous waste facility on which certain land uses are restricted in order to protect the public health and safety, and the environment from the existing or potential hazards caused by the migration of hazardous waste. (Cal. Health and Safety Code, Sec. 25110.3.)

Business Plan: A plan which each business with certain quantities of hazardous materials (including wastes) must prepare under AB 2185/2187 (1985/86). The Business Plan must include an inventory of hazardous materials onsite; an emergency response plan; and employee training procedures.

California Code of Regulations: Previously the California Administrative Code.

California Waste Exchange: A system coordinated through the State Department of Health Services for information sharing between hazardous waste generators and other firms to facilitate the transfer of wastes from the generator to commercial recyclers and other businesses who may use the wastes as raw materials.

CEQA: The California Environmental Quality Act (1970). This act established procedures for permit applicants to prepare Environmental Impact Reports on projects with potential significant impacts on the environment, and conditions for agency approval of such projects.

CEQA Guidelines: Guidelines developed pursuant to CEQA by the Office of the Secretary for Environmental Affairs which describes in detail the requirements for the preparation of Environmental Impact Reports in California.

Chemical Treatment: Treatment processes which alter the chemical structure of hazardous waste constituents to produce an innocuous neutralization, precipitation, ion exchange, chemical dechlorination, and chemical oxidation/reduction.

Class I Land Disposal Facility: A land disposal facility for full containment of hazardous waste which must conform to requirements of the State Water Resources Control Board as specified in Subchapter 15 of Chapter 3, Title 23 of the California Code of Regulations. Class I facilities shall be located where natural geologic features provide optimum conditions for isolation of wastes from the waters of the State. They may not be located in areas subject to flooding by 100 year floods, rapid geologic changes, tsunamis, sieches, and surges, or within 200 feet of a known Holocene fault. After 1990, Class I facilities will be precluded from accepting any untreated hazardous waste, except solid cleanup waste from contaminated sites.

Class II Land Disposal Facility: A land disposal facility for full containment of designated waste (non-hazardous waste containing pollutants which could be released at concentrations exceeding water quality objectives, or which could degrade waters of the State; and hazardous waste which has been granted a variance pursuant to Section 66310, Title 22 of the California Code of Regulations). Class II facilities must conform to requirements of the State Water Resource Control Board as specified in Subchapter 15 of Chapter 3, Title 23 of the California Code of Regulations and shall be located where site characteristics and containment structures isolate wastes from the waters of the State. They may be located within areas subject to flooding, rapid geologic change, tsunamis, sieches, and surges, if they are designed, constructed and maintained to preclude failure in protecting the waters of the State.

Class III Land Disposal Facility: A land disposal facility for non-hazardous waste, including garbage, trash, refuse, paper, ashes, etc., provided such wastes do not contain hazardous or designated wastes. Class III facilities must conform to requirements of the State Water Resource Control Board as specified in Subchapter 15 of Chapter 3, Title 23 of the California Code of Regulations and shall be located where site characteristics provide adequate separation between the waste and the waters of the State. (Also called municipal or sanitary landfill.)

Clean Up Wastes: Hazardous wastes associated with the cleanup of contaminated sites.

Comprehensive Plan (or General Plan): A plan required of counties and cities pursuant to Section 65300 et. seq. of the California Government Code (Title 7: The Planning, Zoning, and Development Laws) which defines long term planning objectives and policies and serves as a guide for local decision makers. Required elements of the plan include: Land Use, Transportation, Housing, Conservation, Open-Space, Seismic Safety, Noise, Scenic Highways, and Safety. Optional elements, such as a Hazardous Waste Element, may also be added to the Plan.

Conditional Use Permit (CUP): A discretionary permit (see definition below), issued by cities and counties, required for certain projects that are allowable only by special permit. A conditional use permit imposes conditions on a project which are designed to assure that the project is compatible with the local Comprehensive Plan and Zoning Ordinances and that impacts to neighboring land uses are minimized.

Corrosive: The ability to cause destruction of living tissue or steel surfaces by chemical action. (Title 22, Cal. Code of Regs., Section 66032.)

Criteria Pollutant: Air pollutant for which a federal or state air quality standard has been set.

Critical/Significant Habitat: Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

Discretionary Project or Permit: A project or permit which requires the use of judgement or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations (i.e. ministerial permits). Public hearings are conducted for discretionary projects.

Disposal: The discharge, deposit, injection, dumping, spilling, leaking, or placing of any hazardous waste into or on any land or water so that such hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters. (Title 22, Cal. Code of Regs., Section 66042.)

Disposal Facility: A facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. (Title 22, Cal. Code of Regs., Section 66044.)

DOHS: Department of Health Services. The State of California agency responsible for overseeing the preparation and implementation of county hazardous waste management plans.

Encapsulated: Enclosed in or as if in a capsule.

Environmental Impact Report (EIR): A detailed statement prepared under CEQA describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the affects.

EPA: Environmental Protection Agency. The federal agency responsible for implementing federal environmental laws.

Fault, Active: A fault which has experienced geological displacement during approximately the last 10,000 years.

Fault, Potentially Active: A fault that was last geologically displaced during the period from approximately 10,000 to 2 million years ago.

Fixation: A process whereby waste is made unchangeable and/or stationary.

General Plan: See Comprehensive Plan.

Generators: The person, business, or facility who, by nature of ownership, management, or control, is responsible for causing or allowing to be caused, the creation of hazardous waste.

Groundwater: The water beneath the surface of the ground. Distinct from surface water and mostly comprising of surface water that has seeped down. Groundwater is a major source of drinking water for Santa Barbara County residents.

Halogenated: Substances having a chlorine, bromine, fluorine, or iodine atom in their structure. In general, halogenated compounds tend to be more environmentally persistent and more toxic than non-halogenated compounds.

Handle: To use, generate, process, produce, package, treat, store, emit, discharge, or dispose of a hazardous material in any fashion. (Cal. Health & Safety Code, Section 25501.)

Hazardous Material: Any substance that is toxic, corrosive, ignitable, reactive, an irritant, or a strong sensitizer and thereby poses a threat to human health and the environment. Hazardous materials generally include hazardous substances and hazardous wastes.

Hazardous Substance: A hazardous material which has commercial value and is not a waste by-product of an industrial or other process. Hazardous substances escaping intended containment are considered hazardous waste.

Hazardous Substances Account: A state fund derived from fees paid by persons who dispose of more than 500 pounds per year of hazardous or extremely hazardous waste in an on or offsite hazardous waste disposal facility. This is the primary funding source for the state Superfund program.

Hazardous Waste: A waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may either:

- cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
- pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed, or otherwise managed.

(Cal. Health & Safety Code, Section 25117.)

EPA and the DOHS have established four characteristics of hazardous waste that can be determined by tests:

- Ignitability - The ability to catch fire, or to burst into flame spontaneously or by interaction with another substance or material.
- Corrosivity - The ability to wear away or destroy other materials, including human tissue.
- Reactivity - the ability to enter into a violent chemical reaction, which may involve explosion or fumes.
- Toxicity - The ability to release certain toxic constituents when leached with a mild acid (Extraction Procedure, or Waste Extraction Test), or demonstrate toxicity in animal studies.

(Title 22, Cal. Code of Regs., Section 66696 et. seq.)

Hazardous Waste Control Account: An on-going state fund, derived from fees paid by operators of on and offsite hazardous waste disposal facilities, which is the basic funding source for the Department of Health Services hazardous waste management program.

Hazardous Waste Control Act: A California law, enacted in 1972, which was the first comprehensive hazardous waste control law in the United States. It established the state's hazardous waste management program within the Department of Health Services.

Hazardous Waste Element: That portion of a Comprehensive Plan that deals with hazardous waste. The County's Hazardous Waste Management Plan will become, after adoption by the County and cities, the Hazardous Waste Element.

Hazardous Waste Facility: Any structure, other appurtenances, and improvements on the land, and all contiguous land, used for the treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous waste. (Cal. Health & Safety Code, Section 25117.1).

Hazardous Waste Landfill: A disposal facility, or part of a facility, where hazardous waste is placed in or on land that is not a land treatment facility, a surface impoundment, or an injection well. (Title 22, Cal. Code of Regs., Section 66123). After 1990, the disposal of

untreated hazardous waste, except solid clean up wastes from existing contaminated sites, in a landfill will be illegal. (Cal. Health & Safety Code, Section 25179.6.) (See also Residuals Repository.)

Hazardous Waste Management: The disposal, handling, processing, storage and treatment of hazardous waste. (See also Management.)

Health Officer, or Local Health Officer: When capitalized refers to the Director of the County Health Care Services Department. Used often in this Plan as a general reference to the Environmental Health Division of Health Care Services.

HWMP: Hazardous Waste Management Plan. The Plan prepared by counties and certain regions under state law (AB 2948, Tanner 1986) to direct the management of hazardous wastes within the boundaries of the affected jurisdiction.

Heavy Metals: Certain metallic elements having a high density and which are generally toxic; for example, lead, silver, mercury, and arsenic.

Ignitable: Capable of being set afire, or of bursting into flame spontaneously or by interaction with another substance or material. (Title 22, Cal. Code of Regs., Section 66107.)

Impermeable: Not permitting passage or penetration, especially of fluids.

Incentives: Refers to certain measures (such as low interest loans, tax breaks, etc.) taken by government to stimulate the development and implementation of an objective, such as improved technologies for managing hazardous waste.

Incineration: Reducing the volume or toxicity of hazardous waste by burning it at high temperatures.

Incinerator: An enclosed device using controlled flame combustion, the primary purpose of which is to thermally break down hazardous waste. Examples are a rotary kiln, fluidized bed liquid injection and cement kiln.

Incompatible Waste: A hazardous waste that is unsuitable for: 1) placement in a particular device or facility because it may cause corrosion or decay and contaminate materials (e.g., container inner liners for tank walls); or, 2) co-mingling with another waste or material under uncontrolled conditions that might produce heat or pressure, fire and explosion, violent reaction, toxic dusts, or flammable fumes or gases.

Inert: Exhibiting no chemical activity; totally unreactive.

Infectious Waste: Biologically active wastes usually associated with medical facilities which present a health hazard due to their potential for infection. Infectious waste has been classified as hazardous waste in California since 1984 and differs from other hazardous waste

in that it is hazardous for a relatively short time and usually requires a living host or specific substrate to survive. (For the complete legislative definition, refer to Chapter 12.)

Inorganic: The class of chemical compound usually containing no carbon and derived from non-living matter (mineral).

Land Application: Hazardous waste disposal method, now in limited use, involving spreading waste onto the ground and allowing the sunlight to evaporate the water contained in it.

Land Disposal: Disposal, storage or treatment of hazardous wastes on or into the land, including, but not limited to, landfill, surface impoundment, waste piles, deep-well injection, land spreading, and co-burial with municipal garbage.

Land Disposal Restrictions: Refers to California's program, administered by the Department of Health Services, to progressively ban the land disposal of certain hazardous and extremely hazardous wastes. Restrictions have been established for cyanide wastes; toxic metal wastes; acid wastes; PCB's; and liquids, sludges, and solid wastes containing halogenated organic compounds. (Title 22, Cal. Code of Regs., Section 66900 et. seq.)

Land Use Permit: A permit required by the County Resource Management Department and city planning agencies for all new or modified developments. or changes of land use.

Large Quantity Generator (LQG): A generator that produces more than 1,000 kg. (2,200 pounds) of hazardous waste per month.

Local Assessment Committee: Review group created by a host or abutting community to analyze a proposed hazardous waste management facility as required by AB 2948 (Tanner 1986). Such Committees may have the authority to negotiate with the facility proponent (on behalf of the community) regarding the conditions under which the hazardous waste management facility may be built.

Management: The systematic control of the storage, transportation, processing, treatment, collection, source separation, recovery and disposal of hazardous wastes. It includes administrative, financial, legal, and planning activities as well as operational aspects of hazardous waste handling, disposal, and resource recovery systems.

Manifest: The document required for shipping hazardous waste, which lists the identity of the generator, the hauler (transporter), the treatment/storage/disposal facility to which the waste is being transported, and the quantity and type of hazardous waste being transported.

Ministerial Project or Permit: Involves governmental decision involving little or no personal judgement by the public official as to the wisdom or manner of carrying out the project. The public official merely applies the law to the facts as presented, but uses no special discretion or judgement in reaching a decision. A ministerial decision involves only the use of fixed standards or objective measurements, and the public official cannot use personal,

subjective judgement in deciding whether or how the project should be carried out. Common examples of ministerial permits include automobile registrations, dog licenses, and marriage licenses.

Mitigation: Reduction of a certain or suspected adverse impact resulting from a proposed action. Includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

Morbidity: The relative incidence of disease in a population.

Mortality: The relative incidence of death in a population.

Municipal Landfill: See Class III land disposal facility.

Neutralization: A treatment technology whereby acids and alkalis are reacted to form salts and water with a pH approaching neutral.

Non-attainment Area: An area whose ambient air levels of pollutants exceed federal or state standards. (May be difficult to approve certain kinds of hazardous waste facilities, such as incinerators, in non-attainment areas.)

Non-halogenated: Substances which do not contain halogens (chlorine, bromine, fluorine or iodine) and generally evaporate at relatively low temperatures. (See also halogenated.)

Offsite Hazardous Waste Facility: Operation involving handling, treatment, storage or disposal of a hazardous waste at a site physically separate from the site of waste generation; at a site not owned by, or leased to the producer of the waste, or at a site which receives waste from more than one generator. (See also specified hazardous waste facility.)

Offsite Treatment: Treatment of waste at a site physically separate from the site where the waste was generated.

Onsite Hazardous Waste Facility: An operation involving treatment, storage, or disposal of hazardous waste on land owned by or leased to the waste producer, at or contiguous to the site of waste generation, and that receives hazardous waste produced only by the producer.

Onsite Treatment: Treatment of a waste on the site where it was originally generated (e.g., within an industrial plant or on the premises.)

Operator: A person, government unit, or company that conducts treatment, storage or disposal of wastes of a facility. The operator may or may not be the developer.

Organic: The class of chemical compounds of carbon, primarily hydrocarbons and their derivatives. The name originated with the belief that this class of compounds could be derived only from living organisms (plant or animal). Now many organic compounds are synthesized in the laboratory.

Permeable Soils: Soils that are open to passage or penetration, especially by fluids.

PCB: Polychlorinated biphenyl -- any of a group of chlorinated compounds used in industrial processes in the form of colorless, odorless, viscous liquid, and discharged in industrial wastes.

Permit: A document issued by a government unit that allows specified activities to proceed under specified conditions.

Pesticide: A chemical used to kill destructive insects or other pests. Generally used to include insecticides, rodenticides, herbicides and fungicides.

pH: A measure of the acidity or alkalinity of a liquid. The pH scale indicates neutrality at 7; acidity is indicated by numbers below 7, down to zero. Alkalinity is indicated by numbers above 7, up to 14.

Physical Treatment: Treatment processes which separate components of a waste stream or change the physical form of the waste without altering the chemical structure of the constituent materials.

Prevention of Significant Deterioration (PSD) Areas: An area as defined by the Clean Air Act (Part C, Sections 160-169) which is in attainment with federal clean air standards (Class I-III) or unclassified under the act. New or modified major emission sources must evaluate potential impacts on air quality if proposed in these areas.

Process Substitution: Substituting one industrial or production process for another, usually in order to reduce the amount of toxic or unwanted material used or produced.

RCRA (Resource Conservation and Recovery Act): One of several federal laws relating to the storage, transportation, and disposal of hazardous wastes. RCRA is the federal law which requires the manifesting of hazardous waste shipments. (See also Appendix A.)

Reactive: Having properties of explosivity or of chemical activity which can be a hazard to human health or the environment.

Recharge Zone: A land area where rainwater, infiltration from surface streams or impoundment areas or other sources soak into the ground and enters an aquifer.

Recycling: Refers to the use or reuse of a waste as an effective substitute for a commercial product, or as an ingredient or feedstock in an industrial process. It also refers to the reclamation of useful constituent fractions within a waste material or removal of contaminants from a waste to allow it to be reused. Recycling includes liquid organics recovery, solvent distillation, and used oil refining. The residuals of recycling may require further treatment and disposal.

Regional Plan: A plan prepared by one of the Council of Governments designated in AB 2948 (Tanner, 1986) or by joint agreement between two or more counties under a legally constituted agency covering the planning area, which has the delegated authority to prepare a Regional Plan. The Southern California Hazardous Waste Management Authority is preparing a regional plan for the Southern California Area.

Registered Hazardous Waste Transporter: A transporter registered with the State Department of Health Services to transport hazardous wastes.

Release: Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching dumping, or disposing of hazardous materials into the environment.

Residuals: Materials remaining after waste treatment and/or reduction processes have taken place. Residuals may be less hazardous, less voluminous, or more easily contained than the original hazardous waste.

Residuals Repository: A conceptual hazardous waste facility for long-term storage of hazardous waste byproducts for which there is no further practical treatment. A residuals repository would not accept liquid or untreated wastes. Wastes would be protected from water infiltration and would be segregated so that wastes such as heavy metals which may in the future have economic value could be recovered and reused. The term was created to distinguish this type of facility from existing Class I landfills in response to new regulations for land disposal of hazardous waste.

Resource Recovery: The reuse or reclamation or any hazardous waste or any recyclable hazardous material. (Title 22, Cal. Code of Regs., Section 66180.)

Siting Criteria: Factors which must be met to determine the location of an appropriate site or area for a hazardous waste management facility.

Risk: A measure of the likelihood and the severity of injury.

RMPP: Risk Management and Prevention Plan required of some businesses handling acutely hazardous materials under AB 3777 (1986).

Sludge: Waste materials in the form of a concentrated suspension of waste solids. One type of sludge is produced from the treatment of sewage.

Small Quantity Generator (SQG): A generator that produces less than 1,000 kg (2,200 pounds) of hazardous waste per month.

Solidification: A treatment process for limiting the solubility of or detoxifying hazardous wastes by producing blocks of treated waste with high structural integrity.

Solid Waste: All solid and semisolid wastes, such as garbage, rubbish, paper, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discharged solid and semisolid wastes at solid waste transfer/processing stations or disposal sites, but excluding: (a) sewage collected and treated in a municipal or regional sewerage system; or (b) material or substances having commercial value, which have been salvaged for reuse, recycling, or resale.

Solvent: A substance used for dissolving another substance.

Source Reduction: The reduction or elimination of waste generation at the source, usually within a process. Source reduction measures can include process modifications, feed-stock substitutions or improvements in feedstock purity, various housekeeping and management practices, increases in the efficiency of machinery, and even recycling within a process. Source reduction implies any action that reduces the amount of waste exiting from a process.

Special Waste: A waste which is a hazardous waste only because it contains an inorganic substance or substances which cause it to pose a chronic toxicity hazard to human health or the environment and which meets all of the criteria and requirements of Section 66742 of Title 22 of the Cal. Code of Regs. and has been classified a Special Waste pursuant to Section 66744. (Title 22, Cal. Code of Regs., Section 66195).

Specified Hazardous Waste Facility: An offsite hazardous waste facility which serves more than one producer of hazardous waste. (Cal. Health and Safety Code, Sec. 25199.1(m).) Also called offsite or commercial hazardous waste facility.

Stabilization: A treatment process for limiting the solubility of or detoxifying hazardous wastes by adding materials which ensure that hazardous constituents are maintained in their least soluble and/or toxic form.

Standard Industrial Classification (SIC) Code : Identification number assigned to specific types of businesses which systematically classifies all economic activities in the United States, dividing them into groups and subgroups. Major groups are assigned two-digit numbers and they are subgrouped into three and four-digit numbers. The U.S. Government publishes The Standard Industrial Classification Manual which lists and describes all SIC code classifications.

Standard Cubic Feet: A volume measurement of a gas at standard temperature and pressure. (See STP.)

Storage: The containment of a hazardous material or hazardous waste, either temporarily or long term, in such a manner as not to constitute disposal or use of such material. (Cal. Health & Safety Code, Section 25123.)

Storage Facility: A hazardous waste facility at which hazardous waste is contained for a period greater than 96 hours at an offsite facility or for periods greater than 90 days at an onsite facility, with specified exceptions. (Cal. Health and Safety Code, Section 25123.3.)

STP: Standard temperature and pressure. Standard temperature is 32°F or 0°C; standard pressure is 1 atm, 760 mmHg, or 14.7 psi.

Superfund: Refers to federal and state funding mechanisms and program, the primary purpose of which is to clean up hazardous waste sites which pose a threat to public health. (See also Appendix A.)

Surface Impoundment: A hazardous waste facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area designed to hold an accumulation of liquid wastes or wastes containing free liquids, usually in order to treat the wastes. Surface impoundments are no longer acceptable in California unless double lined, and equipped with leachate collection and groundwater monitoring systems. (See also TPCA).

Thermal Treatment: Hazardous waste is put into a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character of the waste. (The most common type of thermal treatment is incineration.)

Toxic: Capable of producing injury, illness, or damage to humans, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface.

Toxic Air Contaminant: An air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

Toxic Waste: A waste which can produce injury upon contact with, or by accumulation in a susceptible site in or on the body of a living organism.

TPCA (Toxic Pit Closure Act): State law regulating surface impoundments of hazardous wastes and prohibiting future disposal of untreated liquid hazardous waste. (See also Appendix A.)

Transfer Station: Any facility where hazardous wastes are loaded, unloaded, pumped, or packaged, (Title 22, Cal. Code of Regs., Section 66212), usually for storage and consolidation before being transported elsewhere.

Transportable Treatment Unit: Hazardous waste treatment works which are designed to be moved either intact or in modules and which are intended to be operated at a given location for a limited period of time.

Treated Hazardous Waste: The residual portion of a hazardous waste that is produced when the hazardous waste is treated by a method, technique, or process, including incineration, that changes the physical, chemical, or biological character or composition of the waste and that is in compliance with at least one of the following: (Cal. Health & Safety Code, Sections 25179.3(1), 25179.6)

- It meets the criteria and requirements for, and may be managed as, a special waste pursuant to Section 66744 of Title 22 of the Cal. Code of Regs.
- It does not contain any persistent or bioaccumulative toxic substance in excess of the soluble threshold limit concentration for the substance as established in regulations adopted by the State Department of Health Services.
- It meets treatment standards established by the Environmental Protection Agency pursuant to subsection (m) of Section 201 of the Hazardous and Solid Waste Act Amendments of 1984 (Title 42, U.S. Code, Section 6924 (m)) or, if the State Department of Health Services has established equivalent or more stringent treatment standards, it meets the treatment standards established.

Treatment: Any method, technique or process which changes the physical, chemical or biological character or composition of any hazardous waste or any material contained therein, or removes or reduces its harmful properties or characteristics for any purpose. (Cal. Health & Safety Code, Section 25123.5).

Treatment Facility: Any facility at which hazardous waste is subjected to treatment or where a resource is recovered from a hazardous waste.

TSDF: A treatment, storage, and disposal facility; a term used in definitions of federal and state regulations.

TSCA (Toxic Substances Control Act): One of several Federal laws regulating the handling and storage of hazardous materials. (See also Appendix A.)

Virulence: The relative capacity of a pathogen to overcome body defenses.

Waste: Any material for which no use or reuse is intended and which is to be discarded; or a material which must be treated in some way (i.e. recycled) prior to re-use.

Waste Exchange: Clearinghouse approach to transferring treated and untreated hazardous wastes to an industrial user for use as raw material. Waste exchange is one method of waste minimization. (See also California Waste Exchange.)

Waste Minimization: The reduction, to the extent feasible, of hazardous waste that is generated or subsequently treated, stored, or disposed of. It includes a source reduction or recycling activity undertaken by a generator that results in either (1) the reduction of total volume or quantity of hazardous waste, or (2) the reduction of toxicity of hazardous waste,

or (3) both, so long as the reduction is consistent with the goal of minimizing present and future threats to human health and the environment. Waste minimization, as used in the HWMP, includes source reduction, recycling, and onsite treatment of hazardous wastes.

Wastestream: All waste coming into, through, or out of a facility; sometimes used to refer to all waste, collectively.

Wellhead Protection Area (WHPA): the surface and subsurface area surrounding a well or wellfield that supplies a public water system, through which contaminants are likely to move toward and reach the water well or wellfield. (Safe Drinking Water Amendments of 1986.)

Zoning Ordinances: The set of ordinances developed by a local jurisdiction that designates allowed uses of all areas in the jurisdiction. The zoning ordinances are guided by and support the objectives in the comprehensive plan.

APPENDICES

The following Appendices are available at the Resource Management Department under separate cover.

A. LEGISLATION AND PROGRAMS

- A-1 Legislation
- A-2 Existing County Programs
- A-3 Resolutions of the Board of Supervisors

B. DATA SUPPLEMENT

- B-1 Hazardous Waste Data Analysis
- B-2 Casmalia Resources Facility

C. RATIONALE FOR CHANGES TO DOHS SITING CRITERIA

- C-1 Siting Analysis
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D. LIST OF POTENTIAL FUNDING SOURCES

E. PUBLIC PARTICIPATION EFFORTS

- E-1 List of Committee Members and Backgrounds
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F. HAZARDOUS MATERIALS/WASTE INFORMATION DIRECTORY

Abstract

The purpose of this study was to investigate the effects of a 12-week training program on the physical and psychological health of sedentary individuals.

1. Introduction

- 1.1. Background
- 1.2. Objectives
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2. Methods

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6. Acknowledgments

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